

Service Manual

ORDER NO.
RRV3259

STEREO DVD CASSETTE DECK RECEIVER

XV-EV500

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Remarks
XV-EV500	DFXJ	AC110V-127V/220-230V/240V	3	
XV-EV500	DDXJ/RB	AC110V-127V/220-230V/240V	2	
XV-EV500	DTXJ	AC110V-127V/220-230V/240V	3	

- This service manual should be used together with the following manual(s):

Model No.	Order No.	Remarks
XV-EV500/DLXJ/NC	RRV3216	

- For SPECIFICATIONS and PANEL FACILITIES, refer to the operating instructions.

SAFETY INFORMATION



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING !

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

LASER DIODE CHARACTERISTICS

FOR DVD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 650 nm
FOR CD : MAXIMUM OUTPUT POWER : 7 mW
WAVELENGTH : 780 nm

CAUTION : CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO THE BEAM.

注意：打開時會有CLASS 3B可見和不可見輻射輻射，請勿受輻射束輻射。

VRW2159

DFXJ type
VRW2159

LABEL CHECK

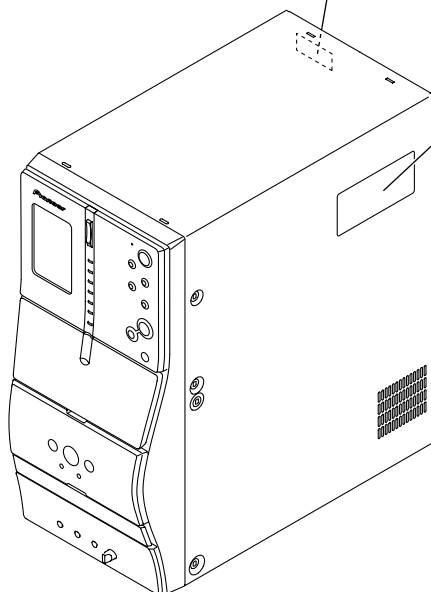
CLASS 1
LASER PRODUCT

Printing on Rear Panel

CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VORSICHT : SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENNABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN!
ADVARSEL : SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGA UDSÆTTELSE FOR STRÅLING.
VARNING : SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRÄKTA EJ STRÅLEN.
VARO! : AVATTAESSA ALTISTUT NÄKYVÄ JA NÄKYMÄTTÖMÄLLE LASERSATEIL YLLE. ÄLÄ KATSO SÄTEESÄN.
CUIDADO : RADIACIÓN LASER VISIBLE E INVISIBLE AL ESTAR ABIERTO. EVITAR EXPOSICIÓN AL RAYO.

VRW1872

DTXJ and
DDXJ/RB types
VRW1872



Additional Laser Caution

1. Laser Interlock Mechanism
 - Loading switch (S101 on the LOAB Assy) is used for interlock mechanism of the laser.When this switch turned ON in SW2 (CLOSE) side (OPEN signal is 0V and CLOSE signal is 3.5V), a laser becomes the status which can completely oscillation.
Furthermore, the laser completely oscillates in the disc judgment and disc playback.
When player is power ON state and laser diode is not completely oscillating, 780nm laser diode is always oscillating by half power.
 - Laser diode is driving with Q307 (650nm LD) and Q308 (780nm LD) on the DVDM Assy.Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
 - In the test mode *, there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.The interlock mechanism mentioned above becomes invalid in this mode.
2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

* : Refer to page 89 on the service manual RRV3216.

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ∇ mark on product are used for disassembly.
- Reference Nos. indicate the pages and Nos. in the service manual for the base model.
- For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω $\rightarrow$ 56×10^1 $\rightarrow$ 561 RD1/4PU $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix}$ J

47k Ω $\rightarrow$ 47×10^3 $\rightarrow$ 473 RD1/4PU $\begin{bmatrix} 4 & 7 & 3 \end{bmatrix}$ J

0.5 Ω $\rightarrow$ R50 RN2H $\begin{bmatrix} R & 5 & 0 \end{bmatrix}$ K

1 Ω $\rightarrow$ 1R0 RS1P $\begin{bmatrix} 1 & R & 0 \end{bmatrix}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω $\rightarrow$ 562×10^1 $\rightarrow$ 5621 RN1/4PC $\begin{bmatrix} 5 & 6 & 2 & 1 \end{bmatrix}$ F

■ CONTRAST TABLE

XV-EV500/DFXJ, DDXJ/RB, DTXJ and DLXJ/NC are constructed the same except for the following :

Ref. No.	Mark	Symbol and Description	Part No.				Remarks
			XV-EV500 /DLXJ/NC	XV-EV500 DFXJ	XV-EV500 DDXJ/RB	XV-EV500 /DTXJ	
P9- 4	NSP	PCB ASSEMBLIES					
		MEDIA ASSY └ IFAF ASSY	XWM3300 XWZ4009	XWM3300 XWZ4009	XWM3301 XWZ4015	XWM3302 XWZ4011	
P7- 1 P7- 3 P7- 8 P7- 9 P7-14	Δ	PACKING SECTION					
		Caution Label	VRW1872	VRW2159	VRW1872	VRW1872	
		AC Power Cord	ADG1154	ADG1154	ADG1156	ADG1154	
		Operating Instructions (English)	XRB3053	XRB3053	XRB3054	Not used	
		Operating Instructions (Chinese)	XRC3209	XRC3209	Not used	Not used	
		Packing Case	XHD3561	XHD3563	XHD3562	XHD3564	
	Δ	AC Power Cord	Not used	ADG7097	Not used	Not used	
		Caution Card SB	Not used	ARM7064	Not used	Not used	
		Operating Instructions (Arabic)	Not used	Not used	XRC3212	Not used	
	NSP	Vinyl Bag	Not used	Not used	Not used	AHG7031	
		Operating Instructions (Thai)	Not used	Not used	Not used	XRC3211	
P9-17	NSP	Warranty Card (Thai)	Not used	Not used	Not used	XRY3004	
	NSP	Service Map (Thai)	Not used	Not used	Not used	XRY3005	
		EXTERIOR SECTION					
		Rear Panel	XNC3395	XNC3397	XNC3396	XNC3398	

Notes : For PCB ASSEMBLIES, Refer to "CONTRAST OF PCB ASSEMBLIES".

■ CONTRAST OF PCB ASSEMBLIES

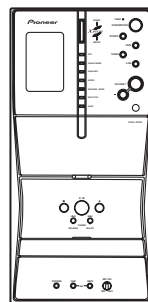
CF IFAF ASSY

XWZ4015, XWZ4011 and XWZ4009 are constructed the same except for the following :

Mark	Symbol and Description	Part No.			Remarks
		XWZ4009	XWZ4015	XWZ4011	
	R5586 R5621	RS1/16S103J Not used	RS1/16S393J RS1/16S683J	RS1/16S103J RS1/16S103J	*1

*1 : Refer to "3.5 IFAF ASSY (1/4)" (D-2) on the service manual RRV3216.

Service Manual



XV-EV500

ORDER NO.
RRV3216

STEREO DVD CASSETTE DECK RECEIVER

XV-EV500

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Regional restriction codes (Region No.)	The voltage can be converted by the following method.	Remarks
XV-EV500	DLXJ/NC	AC110-127V/220-230V/240V	3	With the voltage selector	



For details, refer to "Important Check Points for good servicing".

1 2 3 4

SAFETY INFORMATION

!

A This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING !

B

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

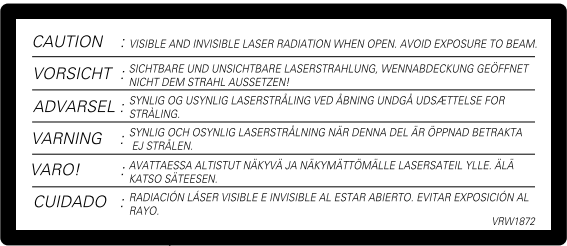
LASER DIODE CHARACTERISTICS

FOR DVD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 650 nm
FOR CD : MAXIMUM OUTPUT POWER : 7 mW
WAVELENGTH : 780 nm

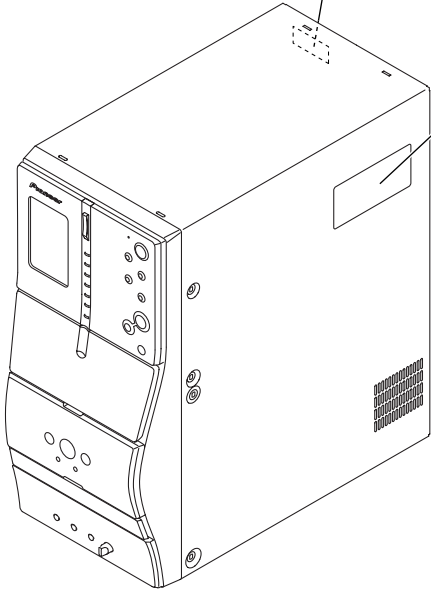
C LABEL CHECK



Printing on Rear Panel



VRW1872



Additional Laser Caution

- 1. Laser Interlock Mechanism**
- Loading switch (S101 on the LOAB Assy) is used for interlock mechanism of the laser.
When this switch turned ON in SW2 (CLOSE) side (OPEN signal is 0V and CLOSE signal is 3.5V), a laser becomes the status which can completely oscillation.
Furthermore, the laser completely oscillates in the disc judgment and disc playback.
When player is power ON state and laser diode is not completely oscillating, 780nm laser diode is always oscillating by half power.
 - Laser diode is driving with Q307 (650nm LD) and Q308 (780nm LD) on the DVDM Assy.
Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
 - In the test mode *, there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.
The interlock mechanism mentioned above becomes invalid in this mode.
- 2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.**

* : Refer to page 89.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

	SAFETY INFORMATION.....	2
	1. SPECIFICATIONS	5
A	2. EXPLODED VIEWS AND PARTS LIST	7
	2.1 PACKING	7
	2.2 EXTERIOR SECTION.....	8
	2.3 AMP SECTION	10
	2.4 FRONT PANEL SECTION	12
	2.5 05 LOADER ASSY.....	14
	2.6 Traverse Mechanism Assy-S	16
	2.7 DECK MECHANISM ASSY	17
	3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	18
	3.1 BLOCK DIAGRAM	18
	3.2 OVERALL WIRING CONNECTION DIAGRAM and LOAB ASSY	20
	3.3 DVDM ASSY (1/2).....	22
B	3.4 DVDM ASSY (2/2).....	24
	3.5 IFAF ASSY (1/4).....	26
	3.6 IFAF ASSY (2/4).....	28
	3.7 IFAF ASSY (3/4).....	30
	3.8 IFAF ASSY (4/4).....	32
	3.9 KEY, LED and DISPLAY ASSYS.....	34
	3.10 HP/MIC ASSY	36
	3.11 AMP ASSY.....	38
	3.12 POWER ASSY (1/4).....	40
	3.13 POWER (2/4) and TRADE ASSYS	42
	3.14 POWER ASSY (3/4).....	44
	3.15 POWER ASSY (4/4).....	46
	3.16 WAVEFORMS	48
C	4. PCB CONNECTION DIAGRAM	49
	4.1 LOAB ASSY	49
	4.2 DVDM ASSY	50
	4.3 IFAF ASSY	52
	4.4 KEY, LED and DISPLAY ASSYS.....	56
	4.5 AMP ASSY.....	58
	4.6 POWER ASSY	60
	4.7 HP/MIC and TRADE ASSYS	64
	5. PCB PARTS LIST	66
	6. ADJUSTMENT	81
	6.1 DECK SECTION	81
	6.1.1 ADJUSTMENT CONDITION	81
D	6.1.2 PLAYBACK and RECORDING SECTION	82
	6.2 DVD SECTION.....	84
	6.2.1 ADJUSTMENT ITEMS AND LOCATION	84
	6.2.2 JIGS AND MEASURING INSTRUMENTS	84
	6.2.3 NECESSARY ADJUSTMENT POINTS	85
	6.2.4 TEST MODE	86
	6.2.5 MECHANISM ADJUSTMENT.....	87
	7. GENERAL INFORMATION	89
	7.1 DIAGNOSIS	89
	7.1.1 TEST MODE	89
	7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE.....	90
	7.1.3 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY	91
E	7.1.4 SPECIFICATION OF MODEL INFORMATION DISPLAY	92
	7.1.5 FUNCTIONAL SPECIFICATION OF THE SERVICE MODE	93
	7.1.6 SERVICE TEST MODE	94
	7.1.7 METHOD FOR DIAGNOSING DEGRADATION OF THE LDs ON THE PICKUP ASSY	95
	7.1.8 DVD TROUBLE SHOOTING.....	96
	7.1.9 ID NUMBER AND ID DATA SETTING	99
	7.1.10 DISASSEMBLY	102
	7.2 PARTS.....	112
	7.2.1 IC	112
	7.3 EXPLANATION	115
	7.3.1 SEQUENCE AFTER POWER ON.....	115
	7.3.2 PROTECTION CIRCUIT.....	116
F	8. PANEL FACILITIES	121

1. SPECIFICATIONS

• Amplifier section

Front 100 W per channel
(1 kHz, 10 % T.H.D., 6Ω)

• Disc section

Digital audio characteristics DVD fs: 96 kHz, 24-bit
Type. DVD system, Video CD/Super VCD system
and Compact Disc digital audio system
Frequency response 4 Hz to 44 kHz
S/N ratio 95 dB
Dynamic range 95 dB
Total harmonic distortion 0.005 %
Wow and Flutter Limit of measurement
(±0.001 % W.PEAK) or less (JEITA)

• Cassette deck section

Systems 4 track, 2-channel stereo
Heads Recording/playback head x 1
Erasing head x 1
Motor DC servo motor x 1
Tape types Type I (Normal)

• FM tuner section

Frequency range 87.5 MHz to 108 MHz
Antenna 75Ω, unbalanced

• AM tuner section

Frequency range
With 9kHz step 531 kHz to 1,602 kHz
With 10kHz step 530 kHz to 1,700 kHz
Antenna Loop antenna

• Miscellaneous

Power requirements
Multi voltage model AC 110-127/220-230/
240 V (switchable), 50/60 Hz

Power consumption 151 W
Power consumption in standby mode 0.5 W
Dimensions:
DVD Tuner Deck Receiver 170(W) 352.5 (H)
340.1 (D) mm

Weight:
DVD Tuner Deck Receiver 7.2 kg

• Accessories (Stereo DVD Tuner Deck)

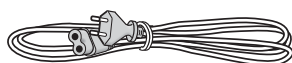
Remote control 1
Power cord
Central and South American, Taiwan,
Philippines, Argentina, Mexico models 2
All other models 1
Power plug adapter (Central and South American,
US Military and Duty Free models only) 1
Video cord 1
AM loop antenna 1
FM antenna 1
Dry cell batteries (AA/R6) 2
Warranty Card (US Military and Duty
Free models only) 1
Operating instructions

Manufactured under license from Dolby
Laboratories. "Dolby", "Pro Logic" and the double-D
symbol are trademarks of Dolby Laboratories.

"DTS" and "DTS Digital Surround" are registered
trademarks of Digital Theater Systems, Inc.

• Accessories

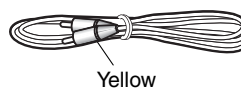
• Power cord
(ADG1154)



• FM Antenna (ADH7030)



• Video Cord
(L = 1.5m) (XDE3046)



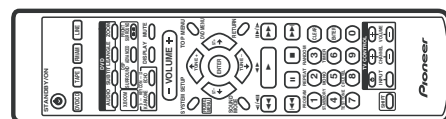
• AM Loop Antenna
(ATB7013)



• Dry Cell Batteries



• Remote Control
(XXD3097)



Disc / content format playback compatibility

This player is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable format.

See the Disc compatibility table below for more information.



Fujicolor CD

-  is a trademark of Fuji Photo Film Co. Ltd.
-  is a trademark of DVD Format/Logo Licensing Corporation
- Also compatible with KODAK Picture CD

This player supports the IEC's Super VCD standard for superior picture quality, dual soundtracks, and widescreen support.



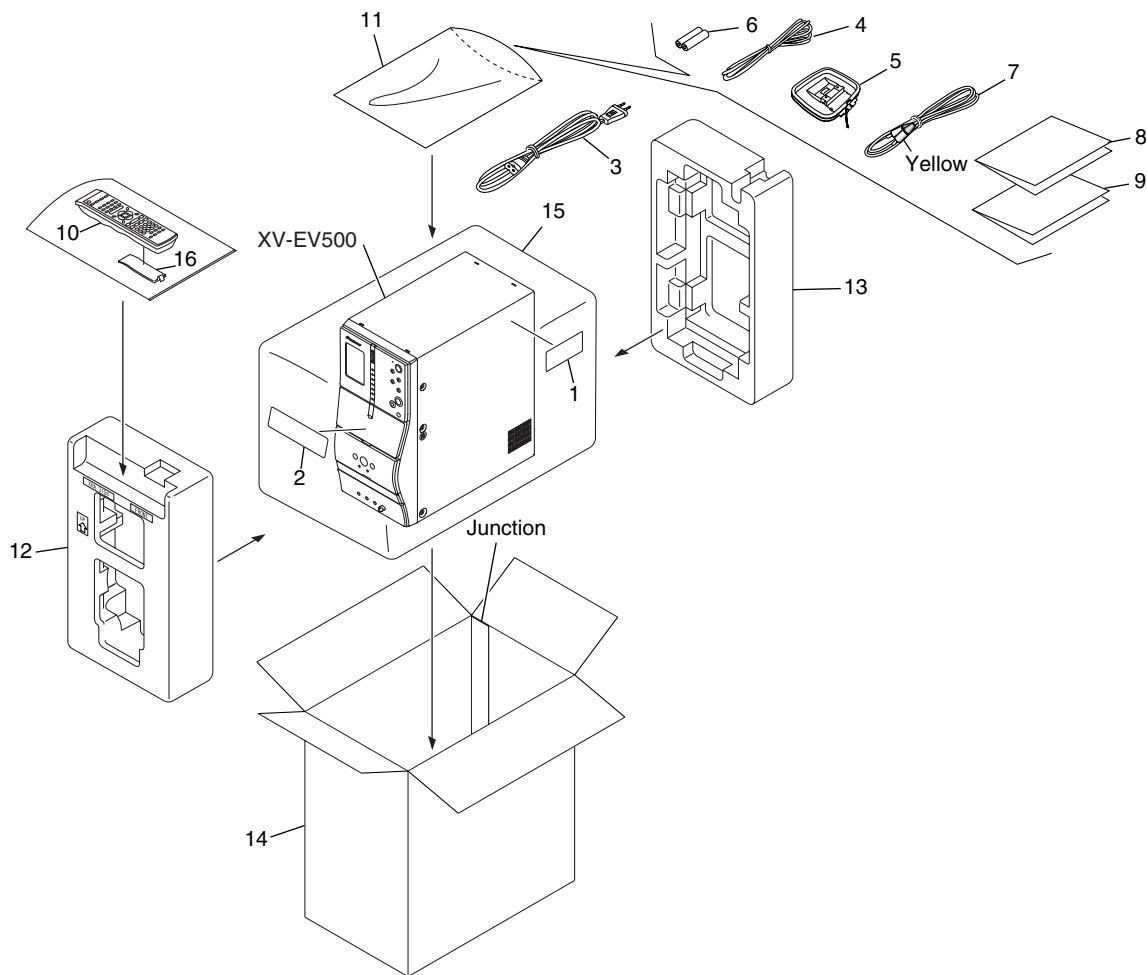
Super Video CD (Super VCD)

2. EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ▼ mark on product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING

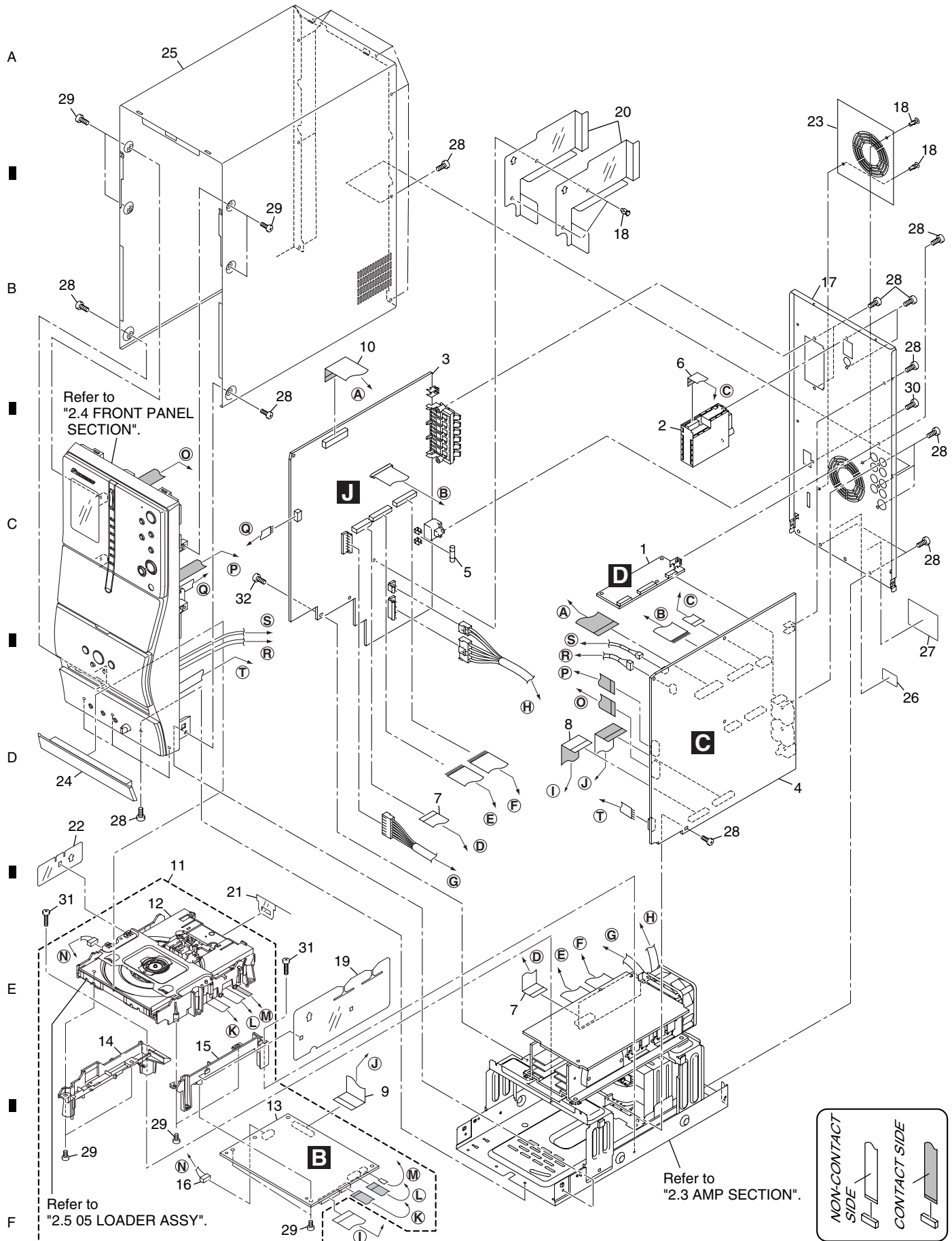


PACKING SECTION PARTS LIST

Mark No.	Description	Part No.
1	Label	VRW1872
NSP 2	Getter Label	XAX3527
 3	AC Power Cord	ADG1154
4	FM Antenna	ADH7030
5	AM Loop Antenna	ATB7013
NSP 6	Dry Cell Batteries (AA/R6)	VEM1031
7	Video Cord	XDE3046
8	Operating Instructions (English)	XRB3053
9	Operating Instructions (Chinese)	XRC3209
10	Remote Control	XXD3097

Mark No.	Description	Part No.
NSP 11	Polyethylene Bag	Z21-038
12	Front Pad	XHA3156
13	Rear Pad	XHA3157
14	Packing Case	XHD3561
15	Packing Sheet	XHG3010
16	Battery Cover	AZN7933

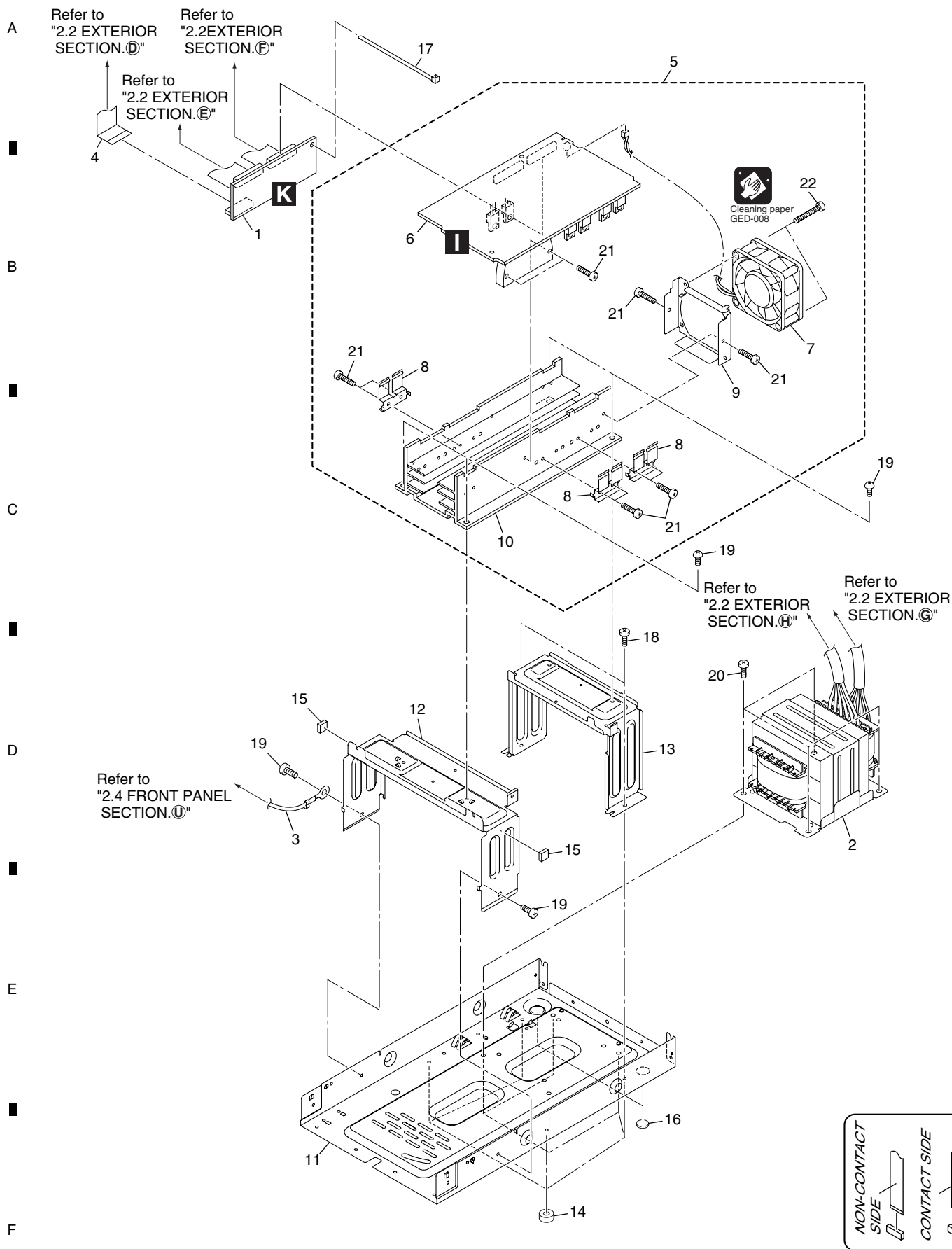
2.2 EXTERIOR SECTION



EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	
1	••••••		
2	FM/AM TUNER Unit	AXX7173	A
3	POWER Assy	XWZ4020	
4	IFAF Assy	XWZ4009	
 5	Fuse (FU1) (5.0A/250V)	REK1029	
6	11P F.F.C/60V	XDD3179	
7	9P F.F.C/60V	XDD3181	
8	25P F.F.C/60V	XDD3182	
9	27P F.F.C/60V	XDD3183	
10	27P F.F.C/60V	XDD3186	
NSP 11	DVD Assy	XXA3036	B
NSP 12	05 LOADER Assy	VWT1219	
13	DVDM Assy	AWM7966	
14	Adaptor 05 L	XNW3014	
15	Adaptor 05 R	XNW3015	
16	Connector Assy	PG05KK-E07	
17	Rear Panel	XNC3395	
18	Push Rivet	XEC3034	
19	Mecha Barrier	XEC3062	
20	Primary Barrier	XEC3063	C
21	FFC Barrier	XEC3064	
22	Cable Barrier	XEC3065	
23	Fan Barrier	XEC3066	
24	Tray Cap	XAK3504	
25	Bonnet Case	XZN3179	
NSP 26	Label	VRW1629	
NSP 27	ID Label Assy	VXW1002	
28	Screw	BBZ30P080FNI	
29	Screw	BPZ30P080FNI	
30	Screw	PPZ30P080FNI	D
31	Screw	XBA3015	
32	Screw	ABA7112	

2.3 AMP SECTION



AMP SECTION PARTS LIST

Mark No.	Description	Part No.
1	TRADE Assy	XWZ4027
 2	Power Transformer (T1)	XTS3099
NSP 3	Cord With Plug	DE015VE0
4	9P F.F.C/60V	XDD3181
NSP 5	AMP Unit	XXQ3006
6	AMP Assy	XWK3203
7	DC Fan Motor	XXM3009
8	FET Bracket A	ANG7418
9	Fan Plate	ANG7462
NSP 10	Heat Sink	XNH3038
NSP 11	Chassis Hal	XNA3025
12	AMP Support F	XNG3141
13	AMP Support R	XNG3142
NSP 14	Spacer	AEB7092
15	Rubber Cushion	XEB3047
16	LEG Cushion R	XEB3050
17	Binder	ZCA-SKB90BK
18	Screw	BBZ30P060FTC
19	Screw	BBZ30P080FNI
20	Screw	BBZ40P060FTC
21	Screw	BBZ30P140FTC
22	Screw	BBZ30P300FTC

4

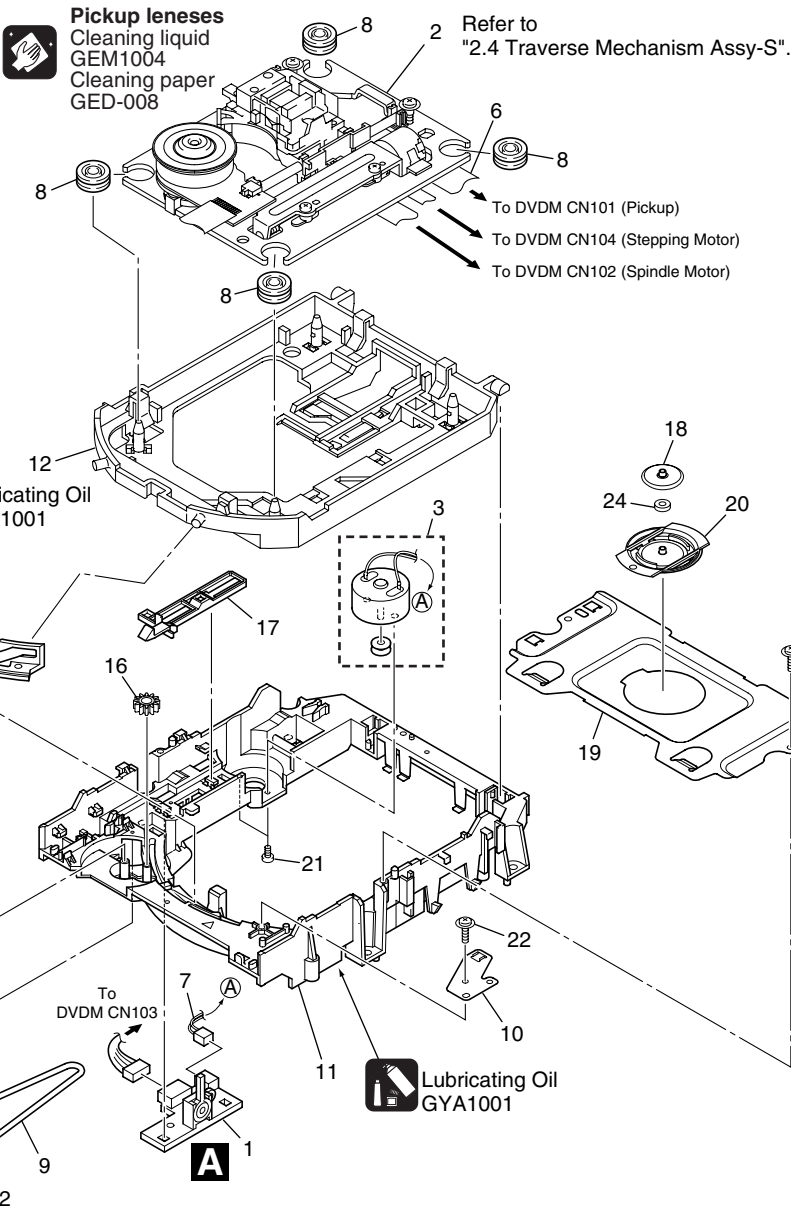


FRONT PANEL SECTION PARTS LIST

Mark No.	Description	Part No.
1	HP/MIC Assy	XWZ4026
2	DISPLAY Assy	XWZ4010
3	KEY Assy	XWZ4013
4	LED Assy	XWZ4023
5	Vertical LCD	XAV3028
NSP 6	Cord With Plug	DE015VE0
7	11P F.F.C/60V	XDD3184
8	13P F.F.C/60V	XDD3185
9	Cable Assy	XDE3066
10	DECK Mechanism Unit	XYM3019
11	GND Plate	XNG3143
12	Ratch Spring R	ABH7131
13	Damper Assy	AXA7052
14	Door Spring R	XBH3002
15	Leg Cushion F	XEB3051
16	Ratch Mold R	XMR3002
17	LCD Holder	XMR3095
18	Binder	ZCA-SKB90BK
19	MIC Knob	XAA3029
20	LCD LT Cond	XAK3502
21	LCD Window	XAK3503
22	Tray Cap	XAK3504
23	Timer Lens	XAK3506
24	Diffusion Sheet	XAK3510
25	•••••	
26	•••••	
27	Front Panel Assy	XZN3181
28	Pioneer Name Plate	VAM1129
29	Operation Button	XAD3228
30	Sub Button	XAD3224
31	Sensor Cover	XAK3505
32	DECK Panel	XAK3508
33	DECK Door	XAN3056
34	Main Button Assy	XXG3216
35	X.Boon Button Assy	XXG3230
36	Screw	BPZ30P080FNI

2.5 05 LOADER ASSY

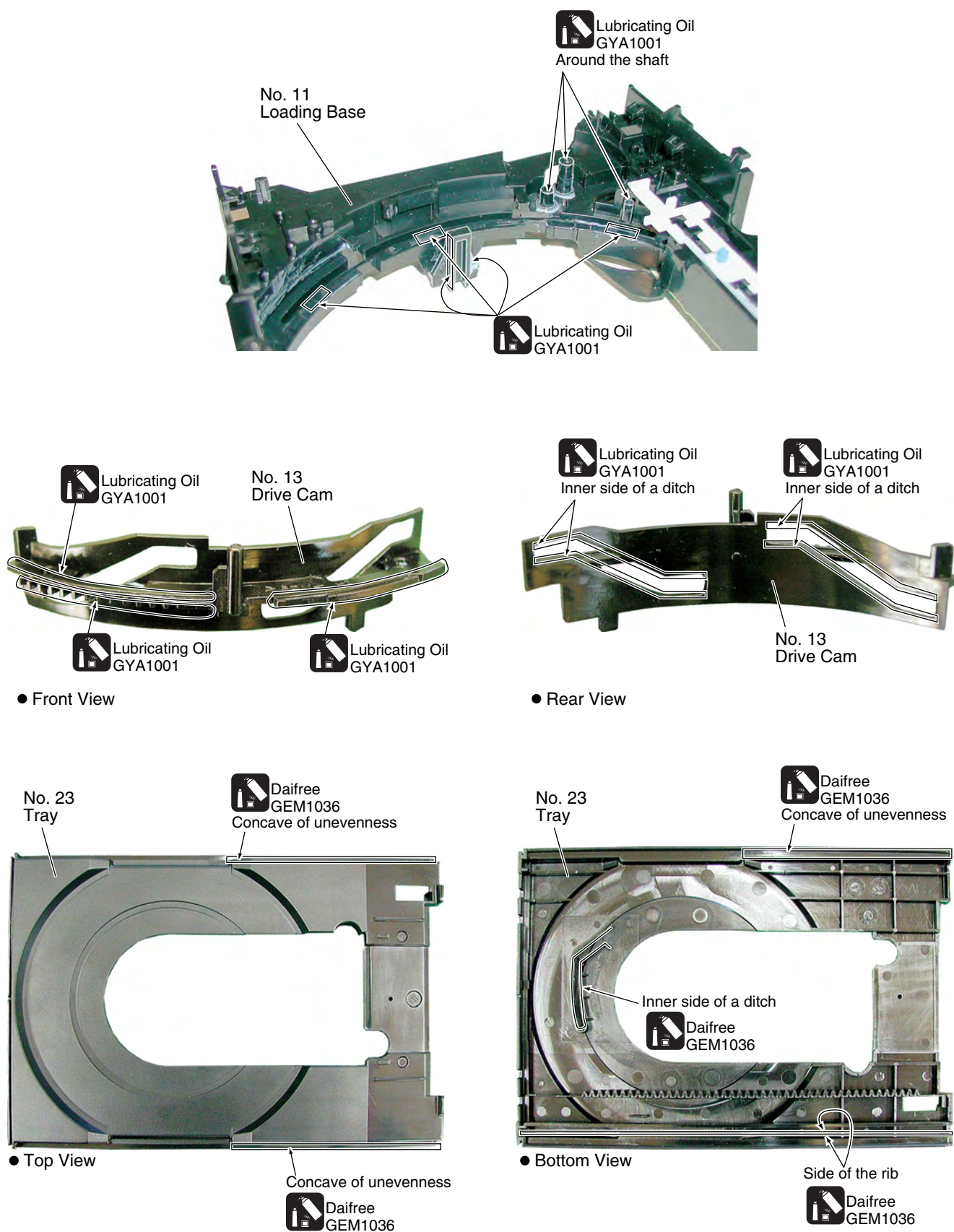
Note :
Refer to "Application of Lubricant".



05 LOADER ASSY PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP 1	LOAB Assy	VWG2346	16	Drive Gear	VNL1923
2	Traverse Mechanism Assy-S	DXX2568	17	SW Lever	VNL1925
3	Loading Motor Assy	VXX2912	18	Clamper Plate 04	VNE2342
4	• • • • •		19	Bridge 04	VNE2343
5	• • • • •		20	Clamper 04	VNL1969
6	Flexible Cable (24P)	VDA2008	21	Screw	JGZ17P028FTC
7	Connector Assy 2P	VKP2253	22	Screw	VBA1094
8	Floating Rubber	VEB1351	23	Tray	VNL1920
9	Belt	VEB1358	24	Clamp Magnet	VMG1029
10	Stabilizer	VNE2253			
11	Loading Base	VNL1917			
12	Float Base 04	VNL1968			
13	Drive Cam	VNL1919			
14	Gear Pulley	VNL1921			
15	Loading Gear	VNL1922			

Application of Lubricant



2.6 Traverse Mechanism Assy-S

Note :



Refer to
"Application of Lubricant".



Pickup lenses
Cleaning liquid
GEM1004
Cleaning paper
GED-008

Note : When part #2 is replaced,
part #13 also need to be
replaced at the same time.

To DVD M CN102
(Spindle Motor)

Silicone Adhesive
GEM1037

To
DVD M CN101
(Pickup Assy)

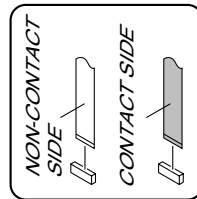
To
DVD M CN104
(Stepping Motor)

Note : Spindle screw (DBA1252) of No.13 is the screw which applied special bond.
Therefore the adhesion becomes ineffective when takes it off once. Spindle screw is the part which cannot recycle.
When part #2 is replaced, part #13 also need to be replaced at the same time.

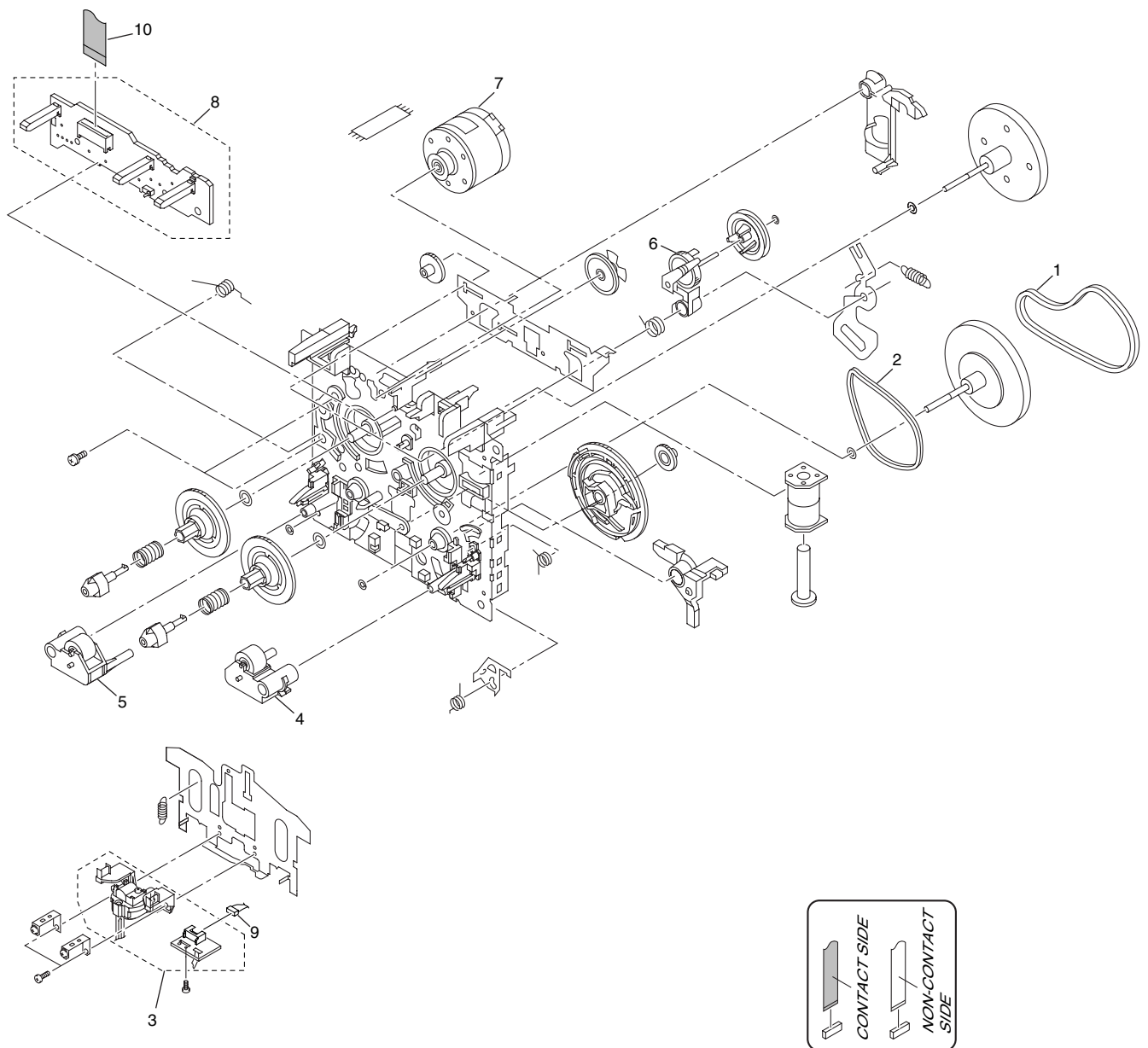
Traverse Mechanism Assy-S PARTS LIST

Mark No.	Description	Part No.
1	05SD Pickup Assy-S	OXX8014
2	Spindle Motor N200	DXM1197
3	Guide Shaft VK1	DLA1940
4	Sub Guide Shaft VK1	DLA1941
NSP 5	Joint VK1B	DNK4272
6	Joint Spring VK1	DBK1235
7	Stepping Motor VK1	DXM1201
NSP 8	Mechanism Frame VK1	DNK4160
9	Precision Screw VK1	DBA1209

Mark No.	Description	Part No.
10	Skew Screw VK1	DBA1211
11	Skew Spring VK1	DBH1516
NSP 12	Stepping Screw	DBA1205
13	Spindle Screw VK1(for Service)	DBA1252



2.7 DECK MECHANISM ASSY



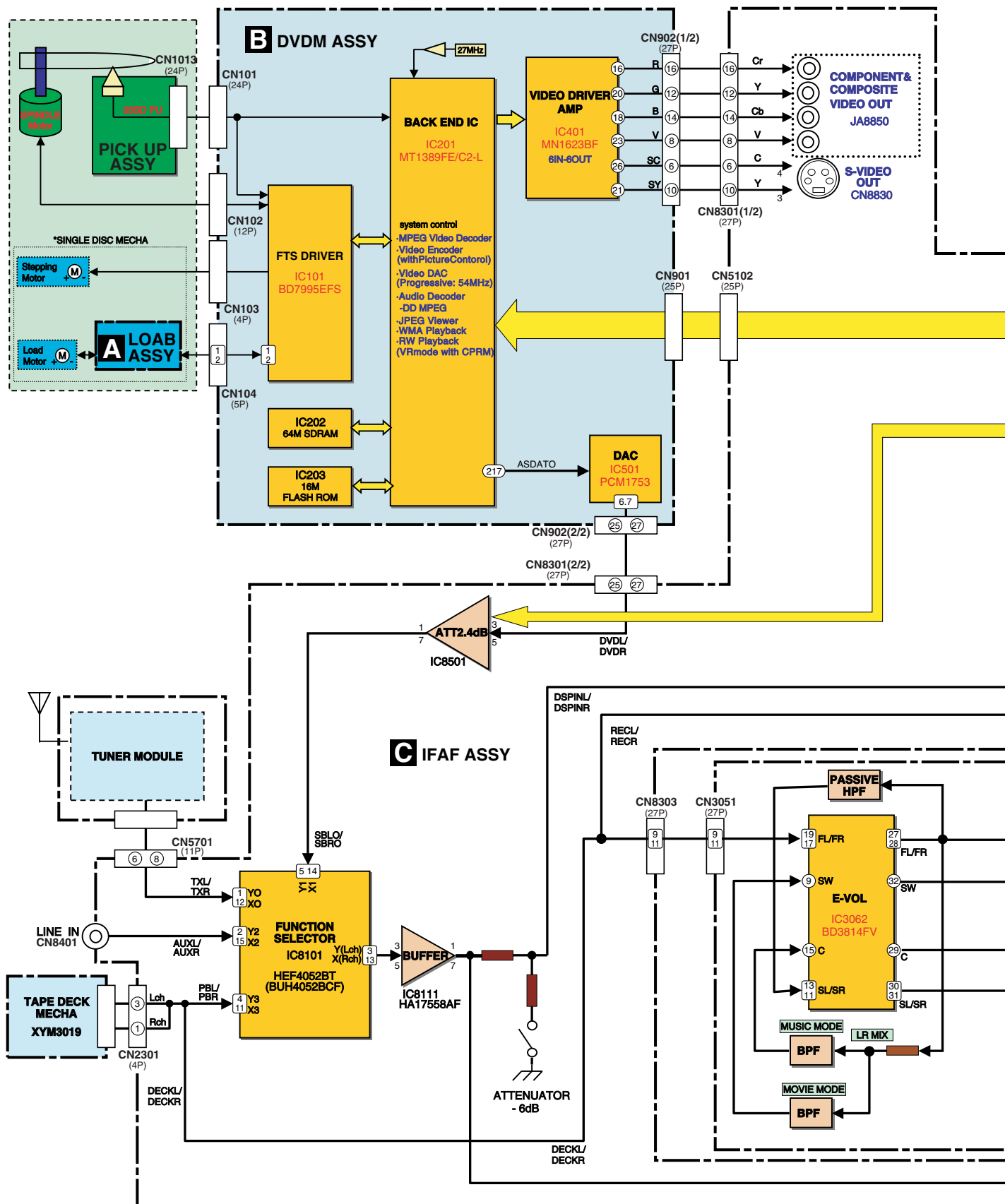
DECK MECHANISM ASSY PARTS LIST

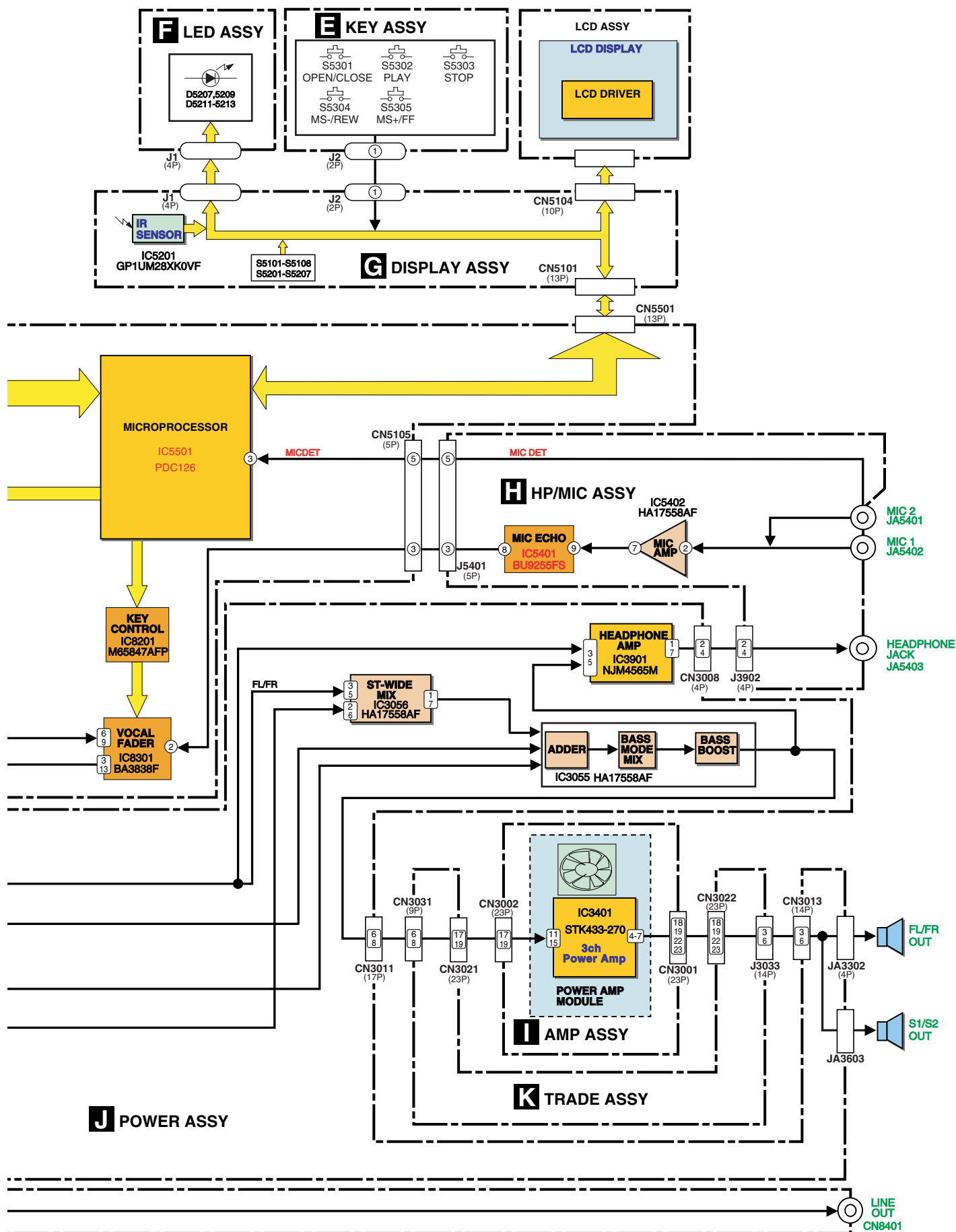
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Main Belt	FF20B-13A	9	Cable Assy	XDE3066
2	F/R Belt	FF19S-31	10	11P F.F.C/60V	XDD3184
3	Plate HD Blk	F513-926			
4	Roller Pinch Blk R	F514-133			
5	Roller Pinch Blk L	F514-134			
6	Clutch Assy Blk	F522-063			
7	Motor Main Blk	F525-394			
8	PCB Control Blk	F567-747			

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

VERTICAL Block Diagram





4



- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
-  : The power supply is shown with the marked box.



4

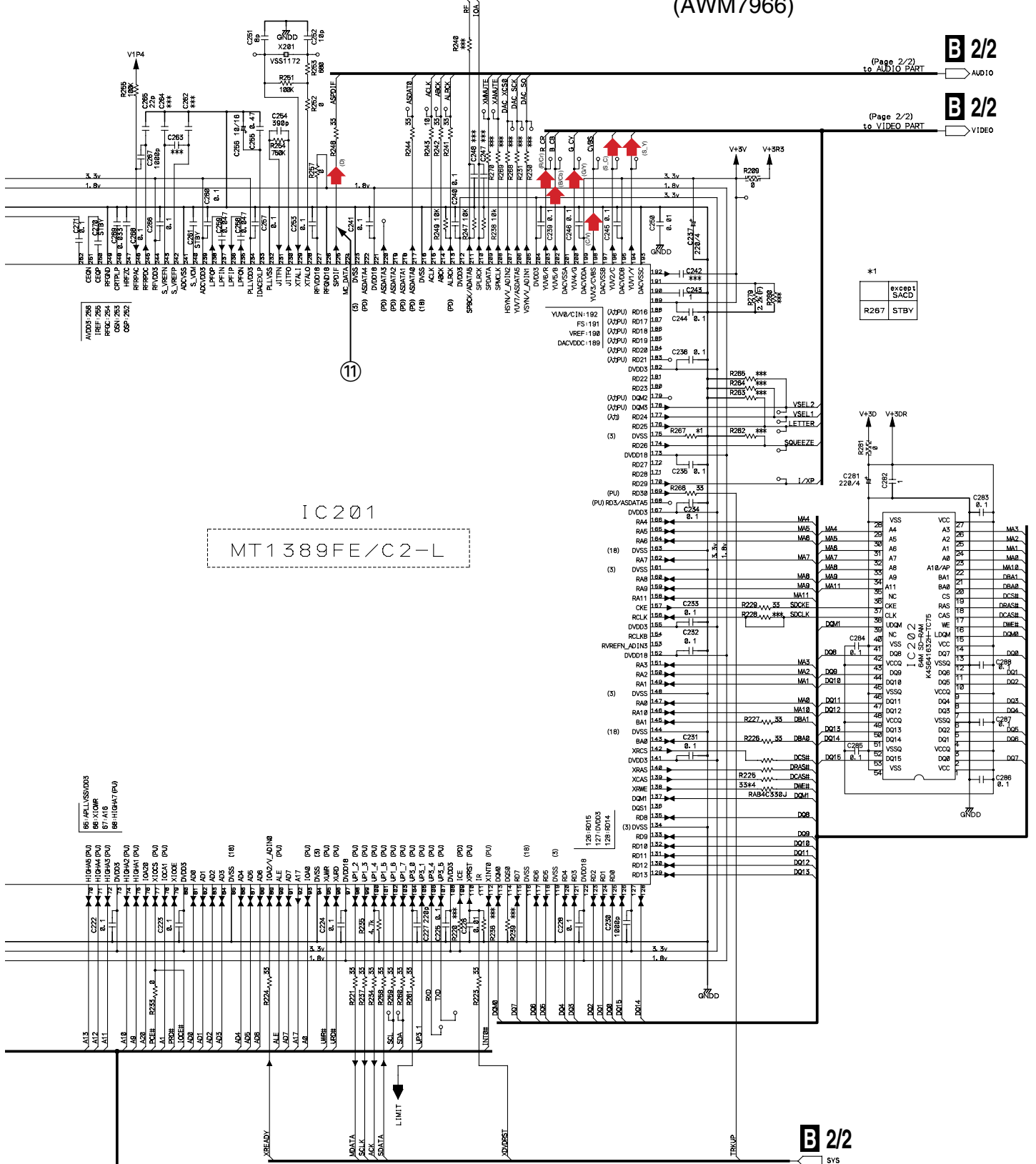
F



22



B 1/2 DVDM ASSY (AWM7966)



A



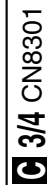
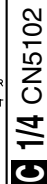
C

D

F

F

VIDEO from PAGE 1/2



- ```
***:parts not mounted
```

## 4

→ MTZJ\*\*\* MA111





# 3.6 IFAF ASSY (2/4)

A

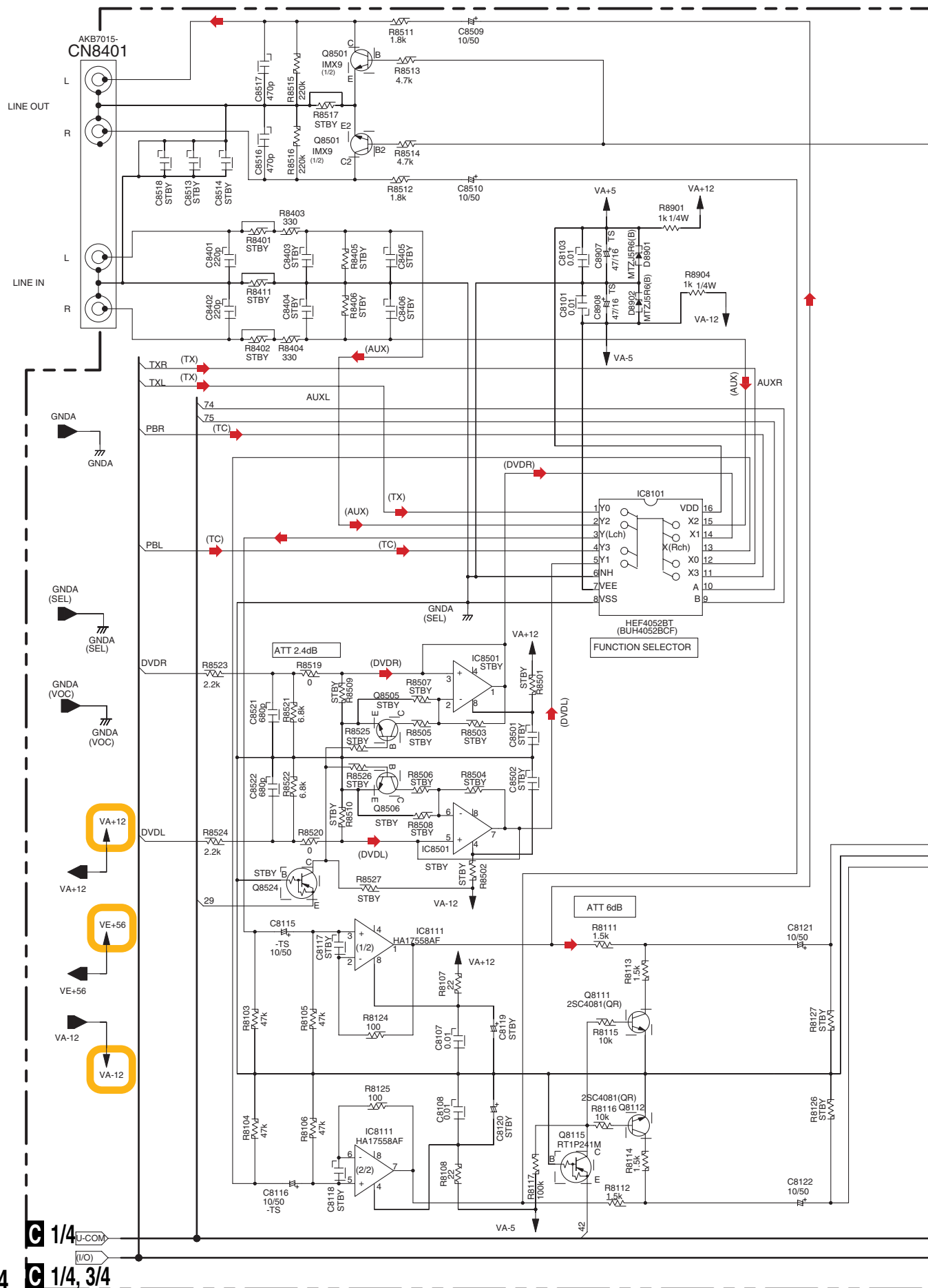
B

C

D

E

F



## A



C

[

**E**

1

3.7 IFAF ASSY (3/4)

A

B

C

D

E

F

C 2/4

I/O

U-COM

C 1/4

RECL

RECR

U-COM

C 3/4

XV-EV500

30



## 4

F





ALL RESISTORS ARE IN  
UNLESS OTHERWISE SPECIFIED

ALL COILS ARE IN  $\mu\text{H}$   
UNLESS OTHERWISE SPECIFIED  
 LAU\*\*\*J

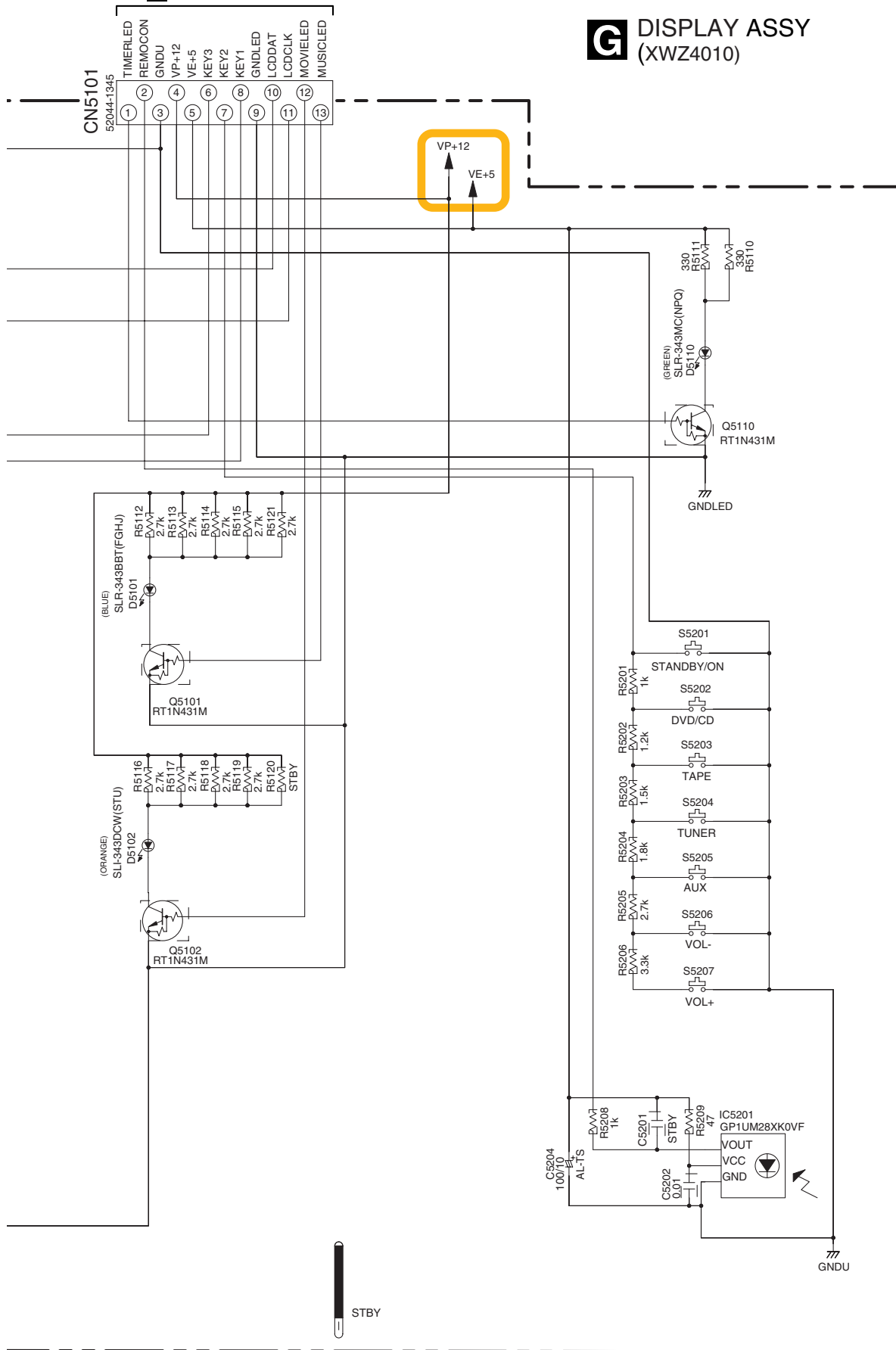
ALL DIODES ARE 1SS133  
UNLESS OTHERWISE SPECIFIED

(FL) ➡ : AUDIO SIGNAL ROUTE (Front L ch)  
(FR) ➡ : AUDIO SIGNAL ROUTE (Front R ch)  
(TC) ➡ : AUDIO SIGNAL ROUTE

△

**C** 1/4 CN5501

**G** DISPLAY ASSY  
(XWZ4010)



**Switches**  
**DISPLAY ASSY**  
S5201 : STANDBY/ON  
S5202 : DVD/CD  
S5203 : TAPE  
S5204 : TUNER  
S5205 : LINE  
S5206 : VOLUME +  
S5207 : VOLUME -

**G**

### 3.10 HP/MIC ASSY

#### NOTES

ALL CAPACITORS ARE IN  $\mu\text{F}$   
UNLESS OTHERWISE SPECIFIED

CH:CCSRCH\*\*\* (OTHER:CKSRYB\*\*\*)

JQ:CEJQ\*\*\*M##-TS  
AL:CEAL\*\*\*M##-TS  
OTHER : CEAT\*\*\*M##

ALL INDUCTORS ARE IN  $\mu\text{H}$   
UNLESS OTHERWISE SPECIFIED.

LAU\*\*\*J

ALL RESISTORS ARE IN  $\Omega$   
UNLESS OTHERWISE SPECIFIED.

RS1/16S\*\*\*J

RD1/4PU\*\*\*J

DIODES

MTZJ\*\*\*

A

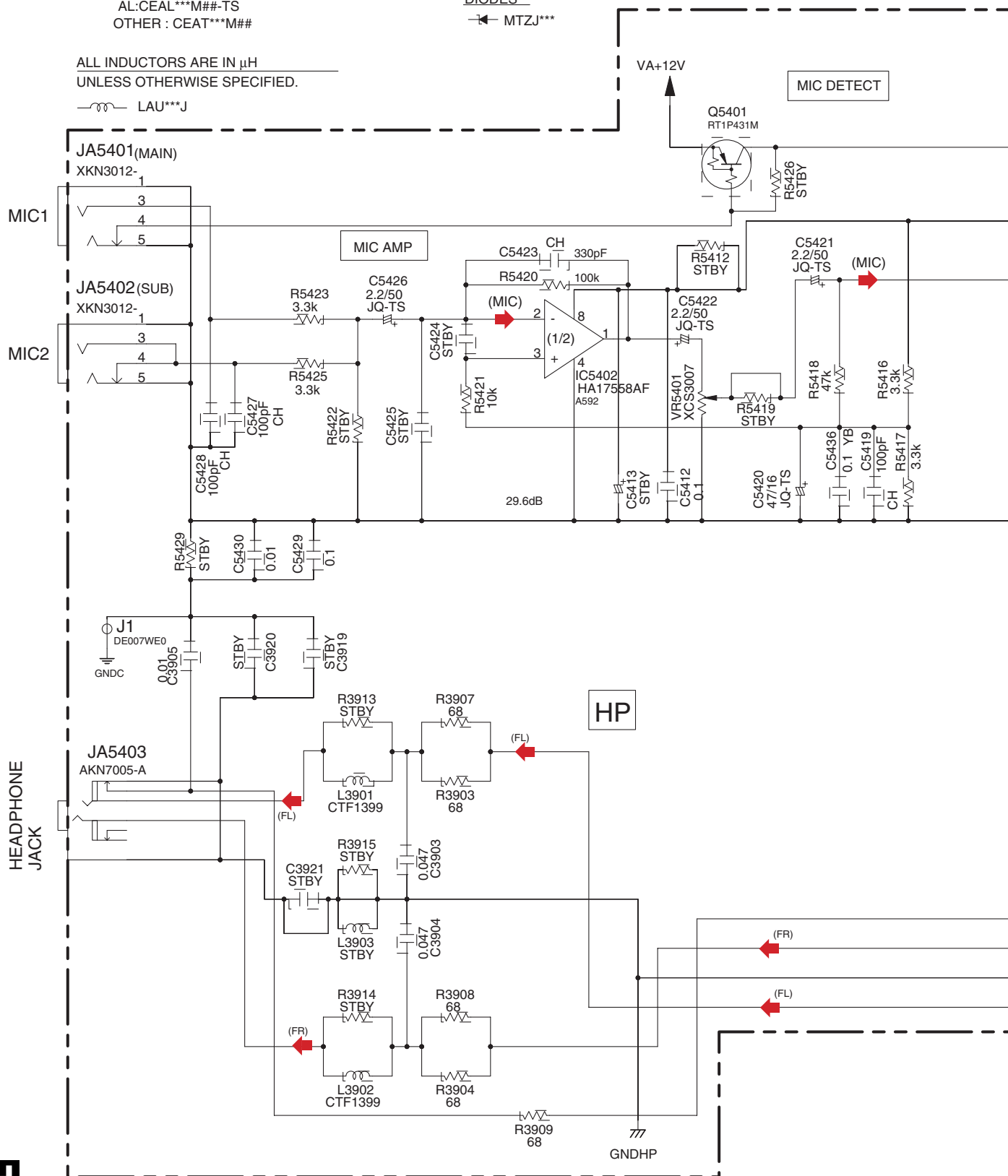
B

C

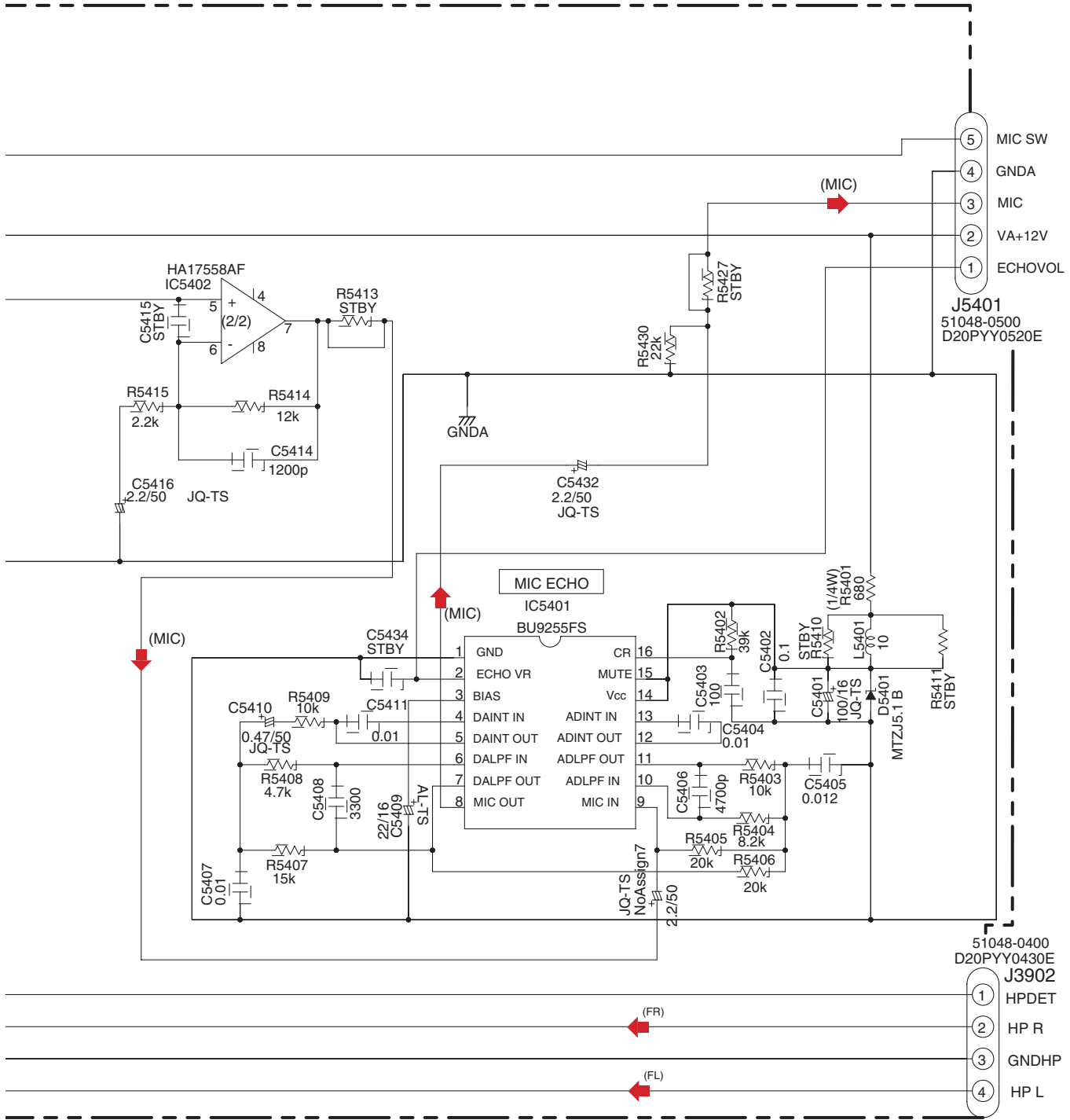
D

E

F



# 

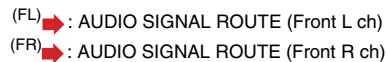


(FL) ➡ : AUDIO SIGNAL ROUTE (Front L ch)  
 (FR) ➡ : AUDIO SIGNAL ROUTE (Front R ch)  
 (MIC) ➡ : AUDIO SIGNAL ROUTE

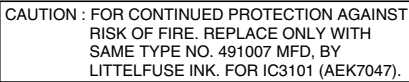
△



: Refer to "7.3.2 PROTECTION CIRCUIT.







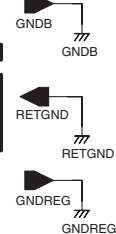
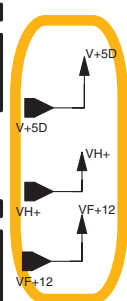
8

### 3.13 POWER (2/4) and TRADE ASSYS

#### J 2/4 POWER ASSY(XWZ4020)

J 1/4

: Refer to "7.3.2 PROTECTION CIRCUIT"



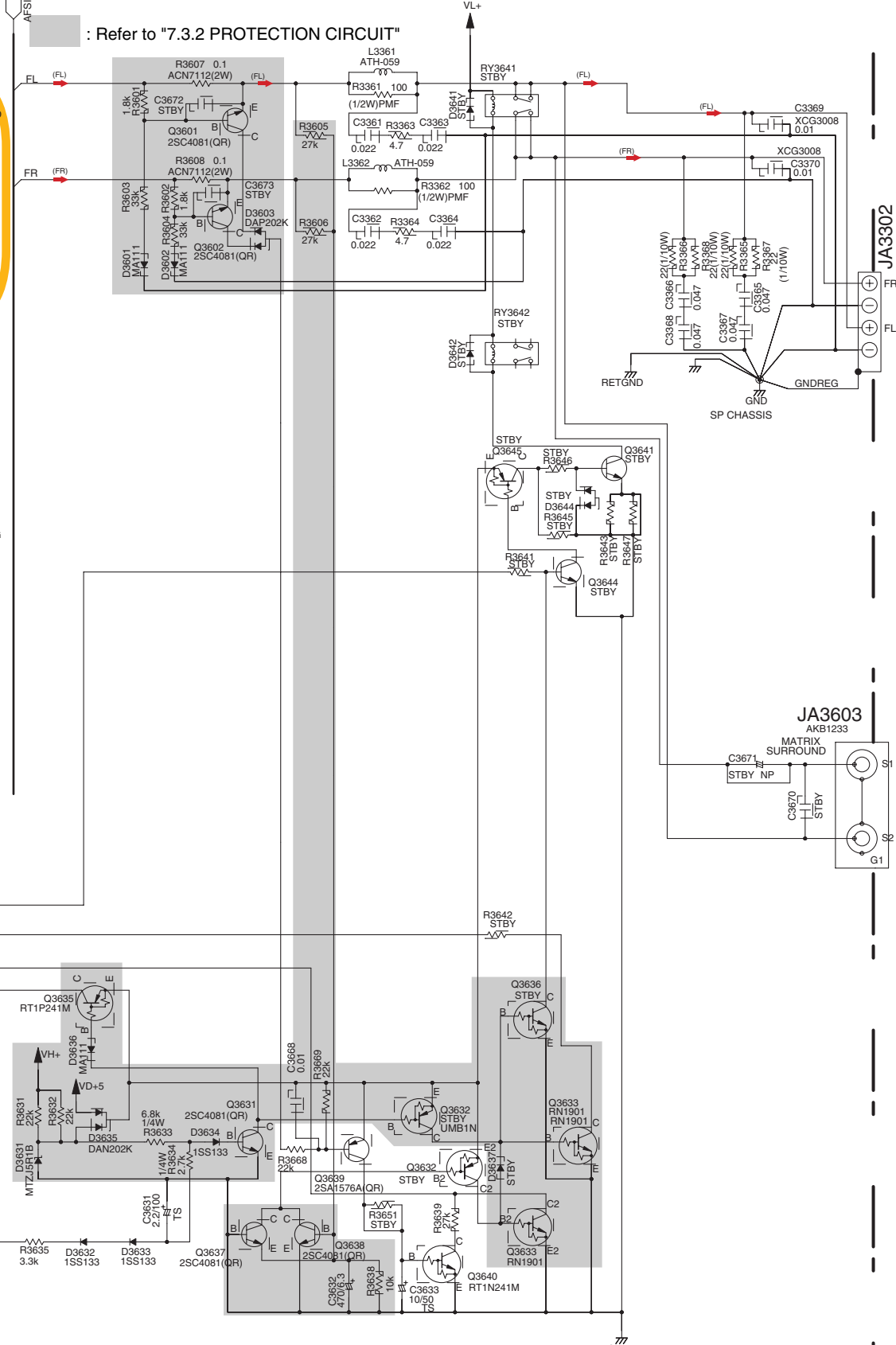
J 1/4

CONTROL

RY-F  
RY-R  
XPROT  
HPAC

AC1

J 2/4



JA3302  
XGE3038 (4 PINS)  
SPEAKER for FL/FR

JA3603

AKB1233

MATRIX SURROUND

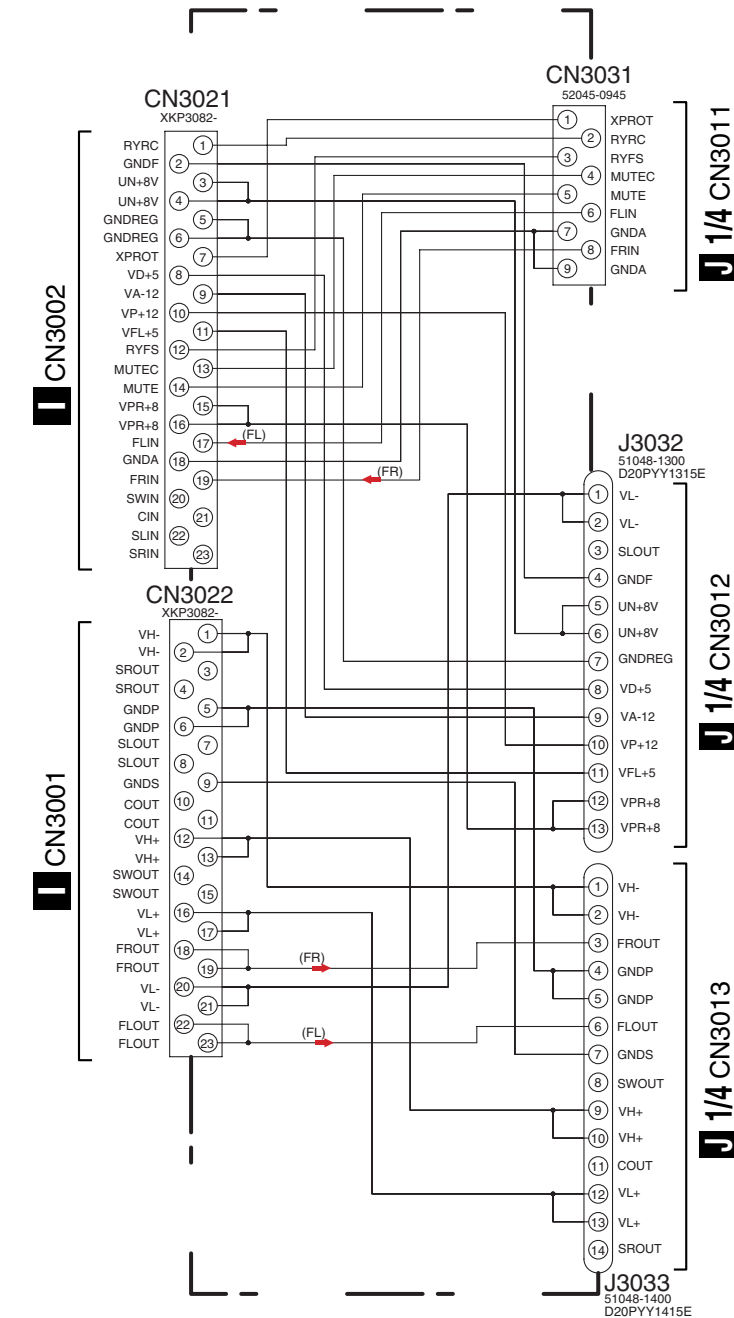
C3671 STBY NP

C3670 STBY

S1

S2

G1



ALL RESISTORS ARE IN

|                             |              |
|-----------------------------|--------------|
| $\Delta/\nabla$             | RS1/16S***J  |
| $\Delta/\nabla$<br>(1/10W)  | RS1/10S***J  |
| $\sim\sim\sim$              | RD1/4PU***J  |
| $\sim\sim\sim$<br>(1W)      | RS1LMF***J   |
| $\sim\sim\sim$<br>PMF(1/2W) | RD1/2PMF***J |
| $\sim\sim\sim$<br>FU(1/4W)  | RF1/4PS***J  |

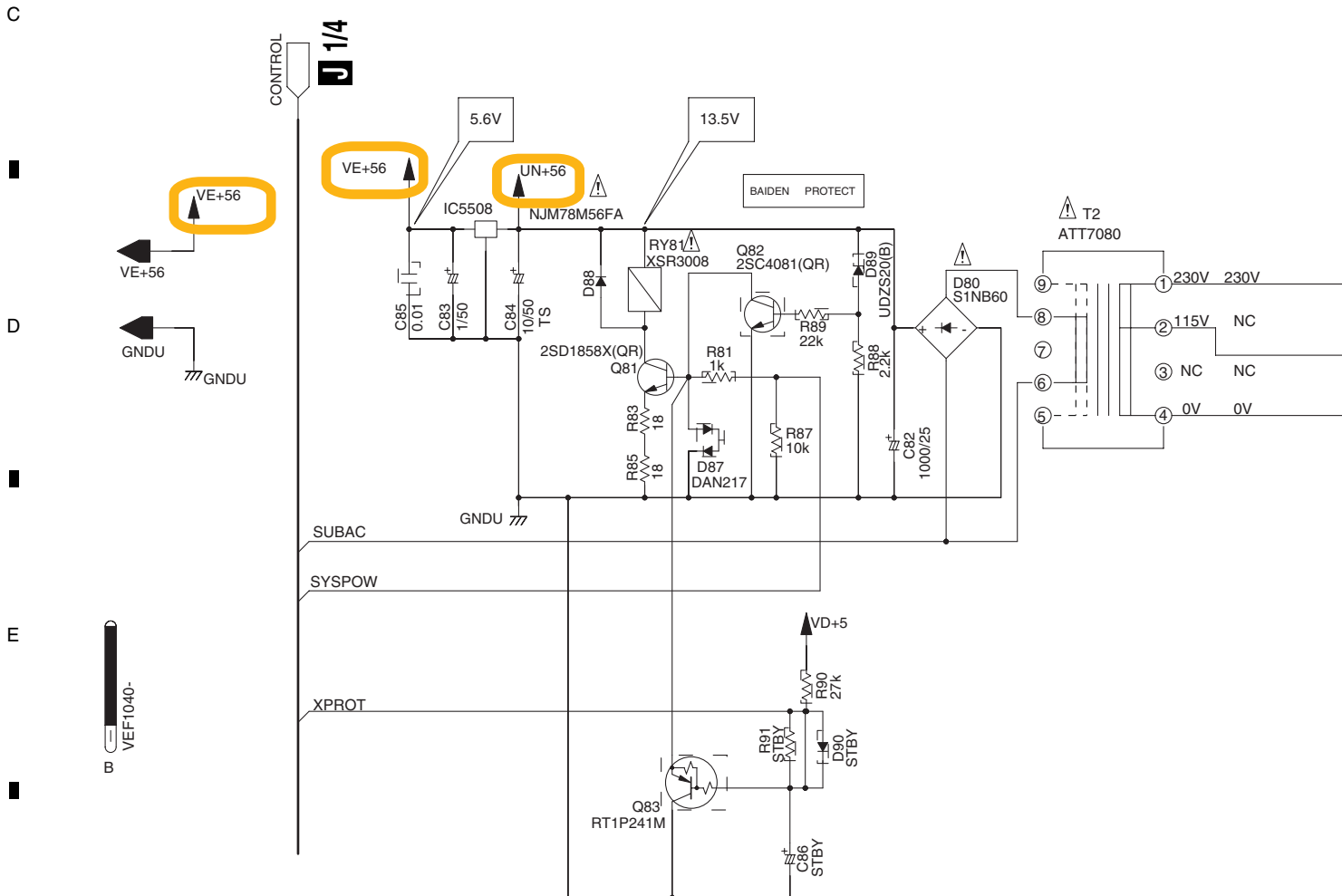
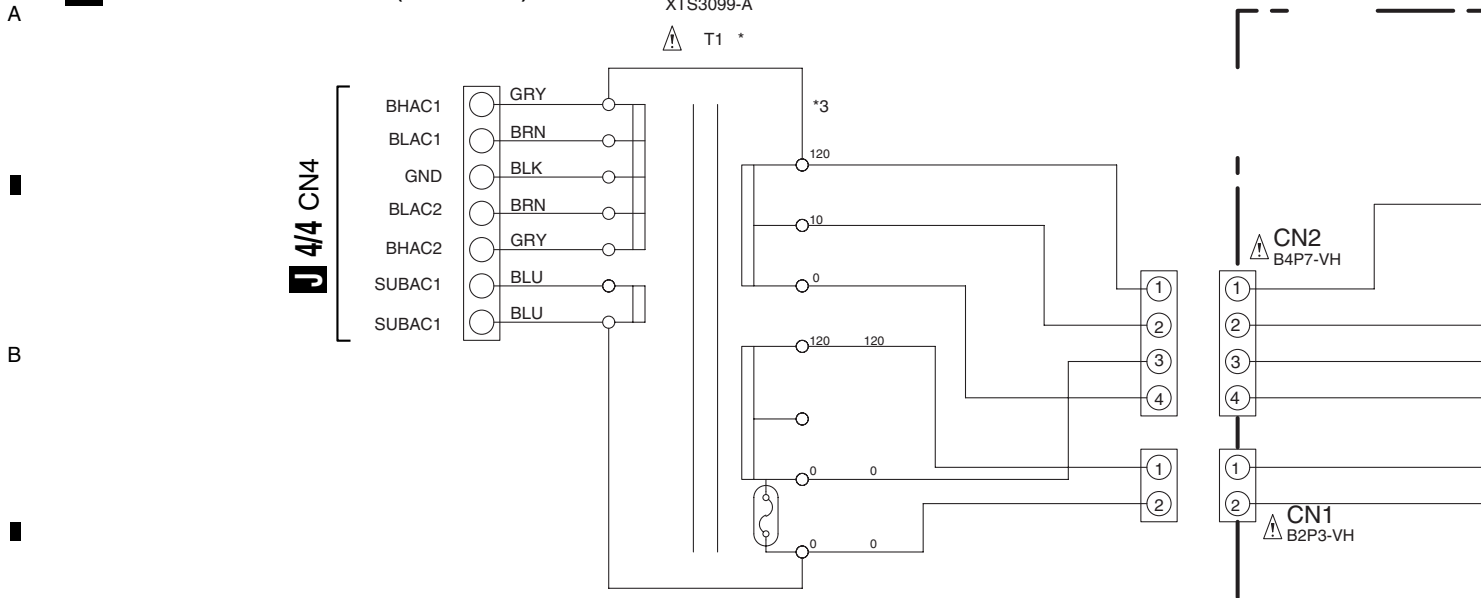
**NOTES**

ALL CAPACITORS ARE IN  $\mu$ F  
UNLESS OTHERWISE SPECIFIED

|                |                              |
|----------------|------------------------------|
| $\square$      | CH:CCSRCH<br>(OTHER: CKSRYB) |
| $\square$<br>M | CQMA                         |
| $\square$      | CEAT                         |

3.14 POWER ASSY (3/4)

J 3/4 POWER ASSY(XWZ4020)



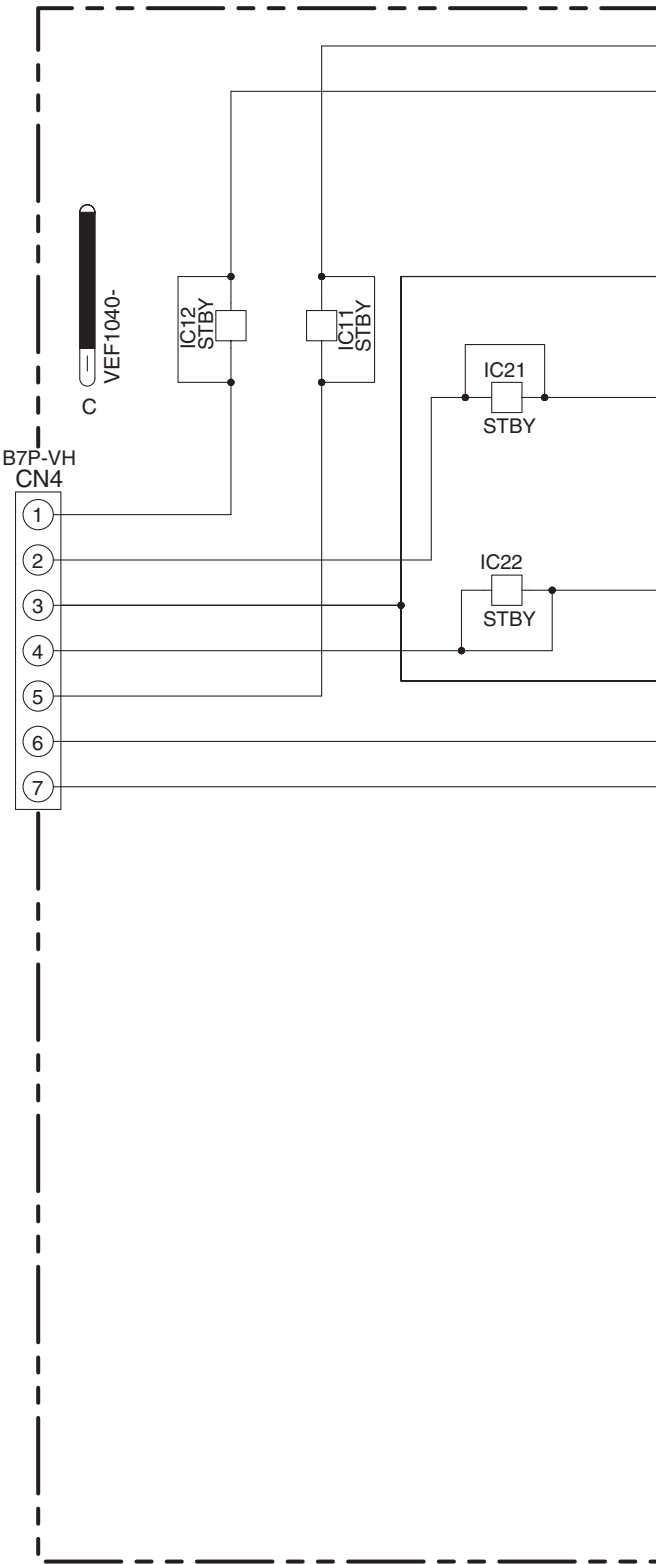
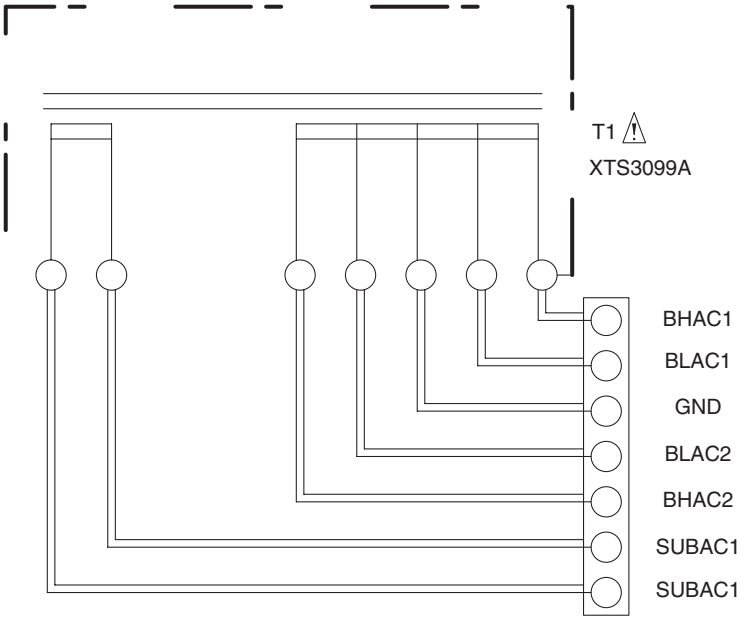
J 3/4



1 2 3 4

### 3.15 POWER ASSY (4/4)

**J** 4/4 POWER ASSY(XWZ4020)



**NOTES**

ALL CAPACITORS ARE IN  $\mu$ F  
UNLESS OTHERWISE SPECIFIED

YF : CKSRYF  
(OTHER : CKSRYB)

M : CQ MBA

AL : CEAL  
(OTHER : CEAT\*\*\*M##)

ALL RESISTORS ARE IN

1/16W

1/4WPU

DIODE

1SS133

MA111

**J** 4/4



## 3.16 WAVEFORMS

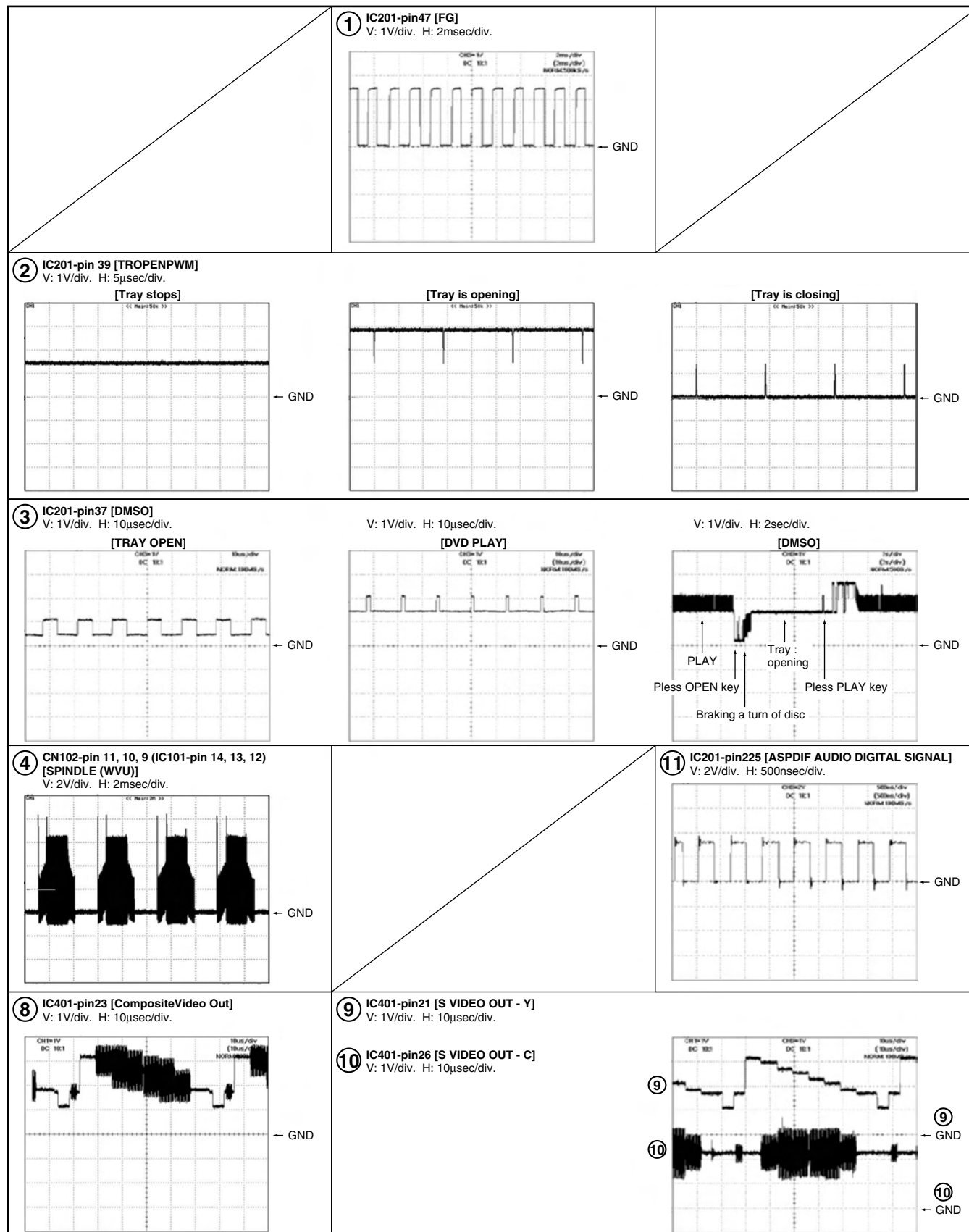
Note : The encircled numbers denote measuring point in the schematic diagram.

### A B DVDM ASSY

#### Measurement condition ;

No. 1 to 10 : reference A1 (DVD), T2-chp 19, Color-bar

No. 11 to 14 : reference A1 (DVD), T1



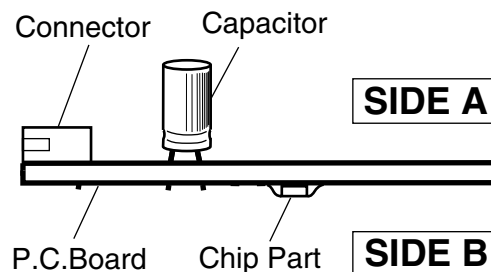
## 4. PCB CONNECTION DIAGRAM

### NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

| Symbol In PCB Diagrams | Symbol In Schematic Diagrams | Part Name                |
|------------------------|------------------------------|--------------------------|
|                        |                              | Transistor               |
|                        |                              | Transistor with resistor |
|                        |                              | Field effect transistor  |
|                        |                              | Resistor array           |
|                        |                              | 3-terminal regulator     |

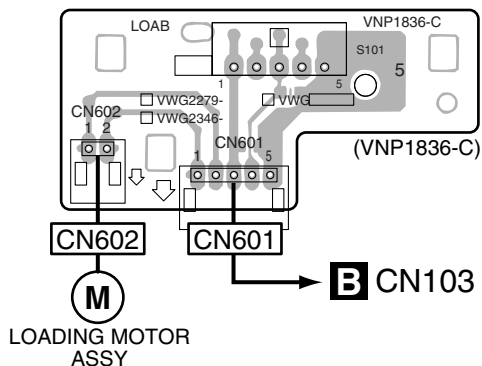
3. The parts mounted on this PCB include all necessary parts for several destinations.
- For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



### 4.1 LOAB ASSY

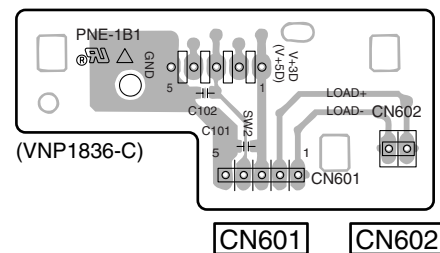
**SIDE A**

#### **A** LOAB ASSY



**SIDE B**

#### **A** LOAB ASSY

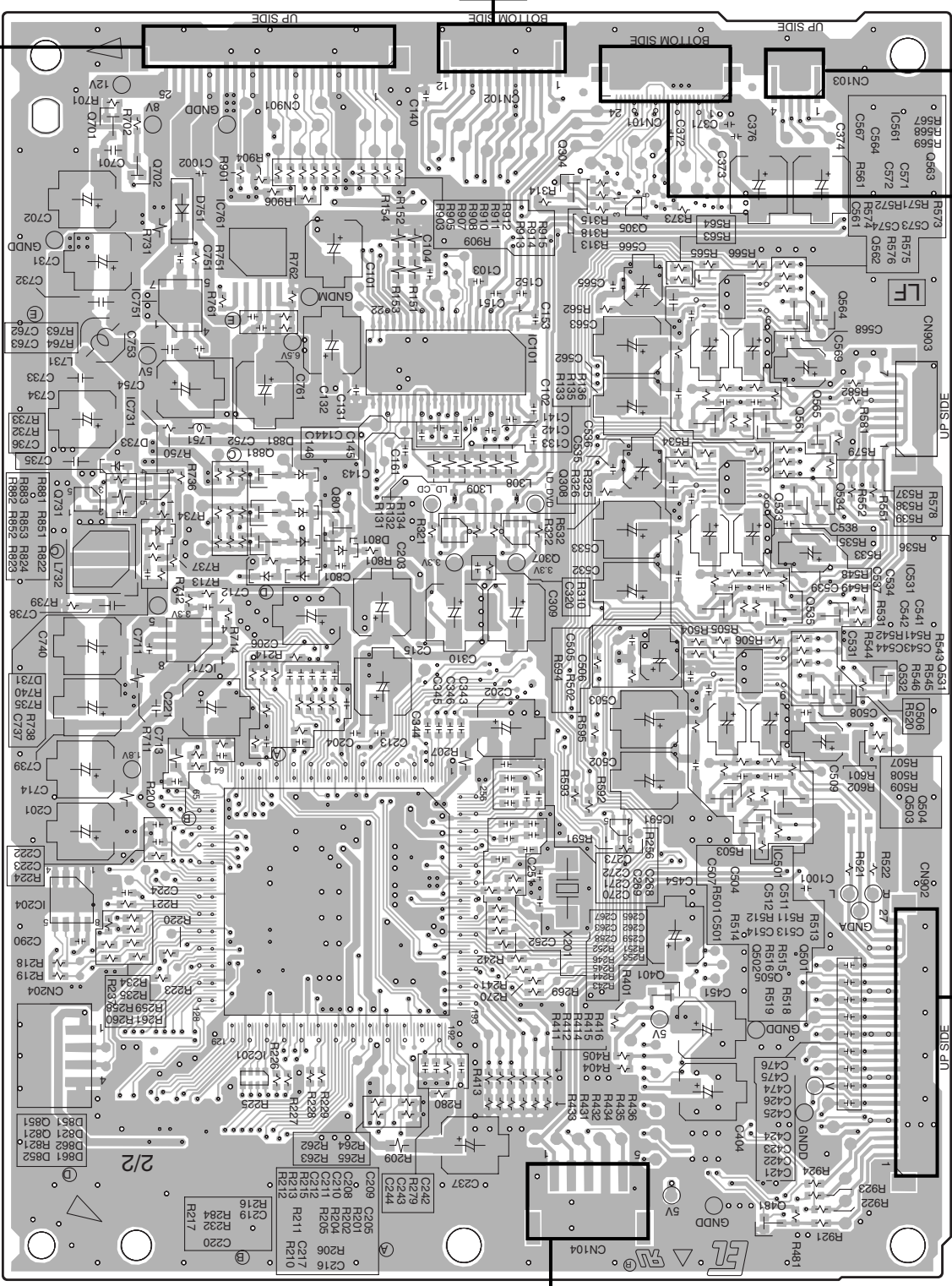


**A**

**A**

△

XV-EV500



(ANP7527-A)



# 4.3 IFAF ASSY

SIDE A

IFAF ASSY

B CN902

B CN901

G CN5101

H J5401

(XNP3096-C)

XV-EV500

P



4

**SIDE B**

A

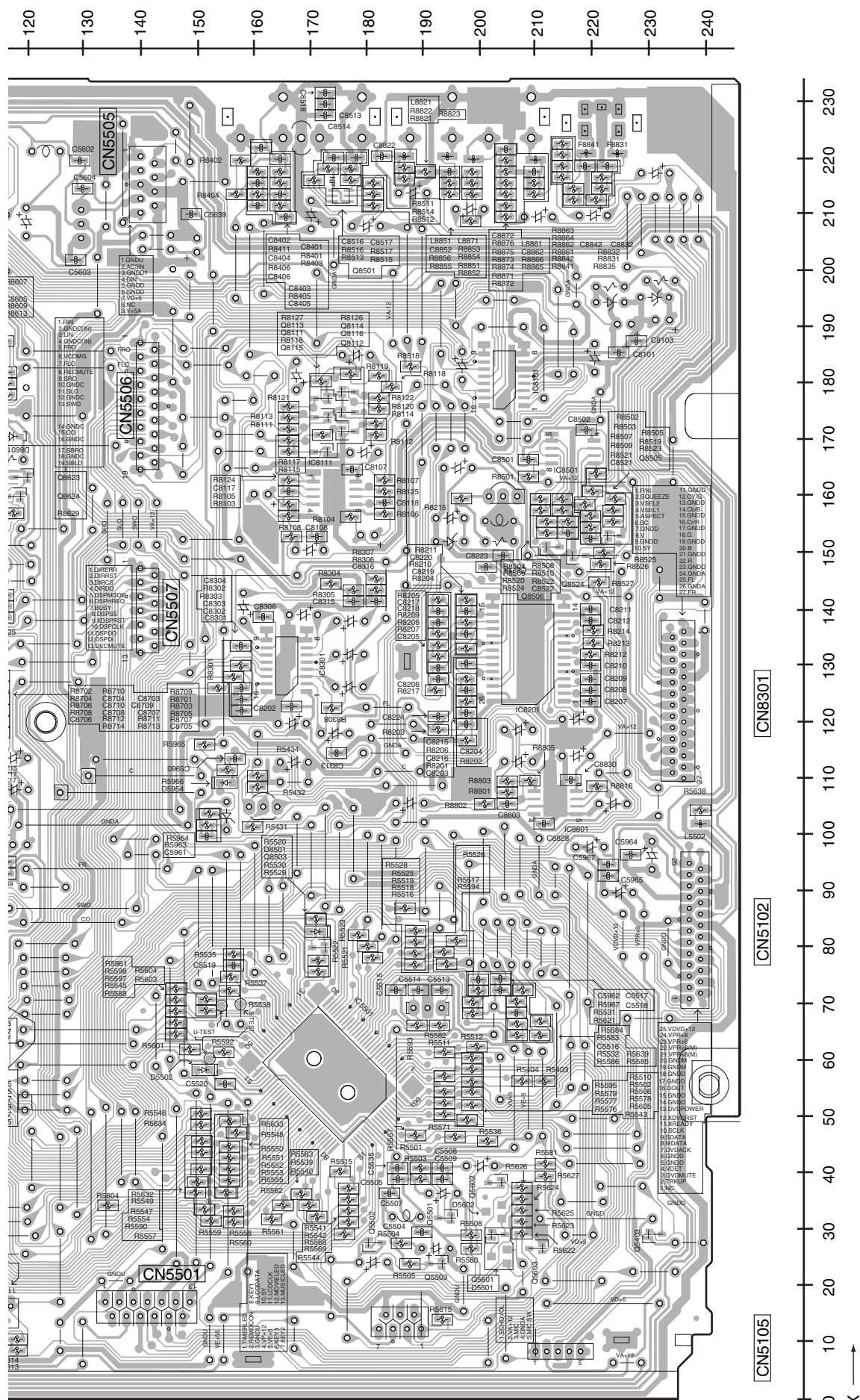
B

C

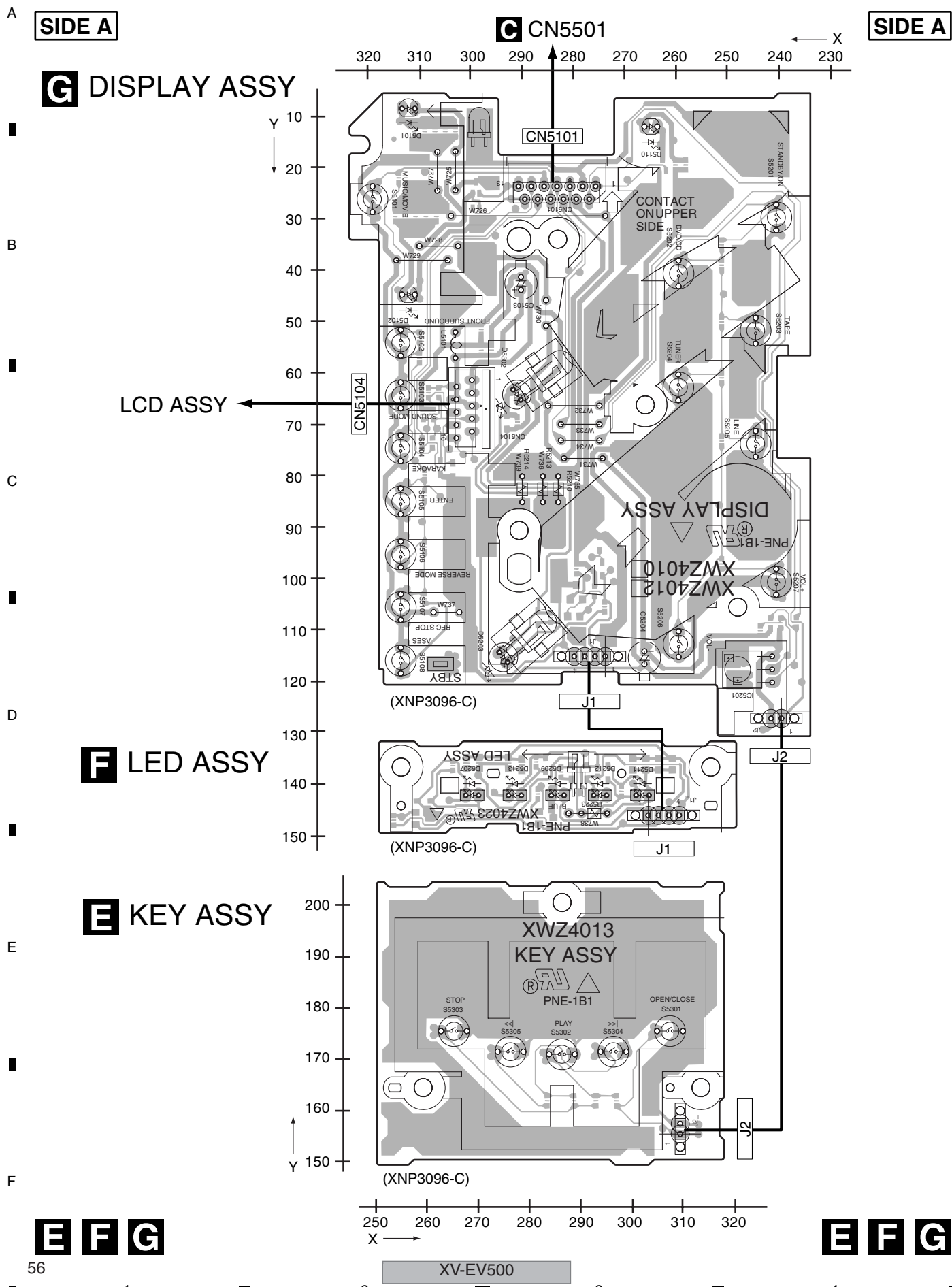
D

F

F



## 4.4 KEY, LED and DISPLAY ASSYS



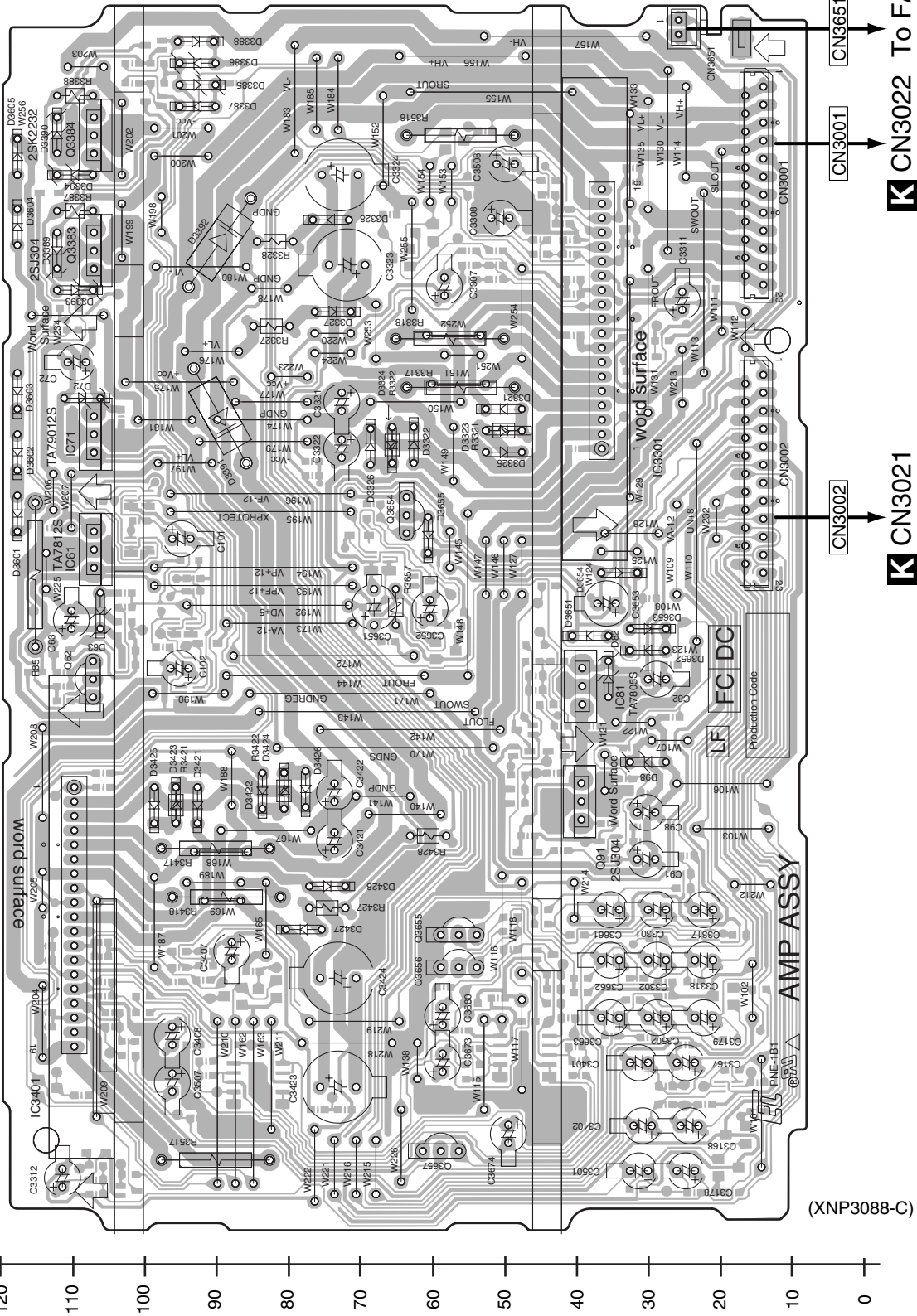


# 4.5 AMP ASSY

SIDE A

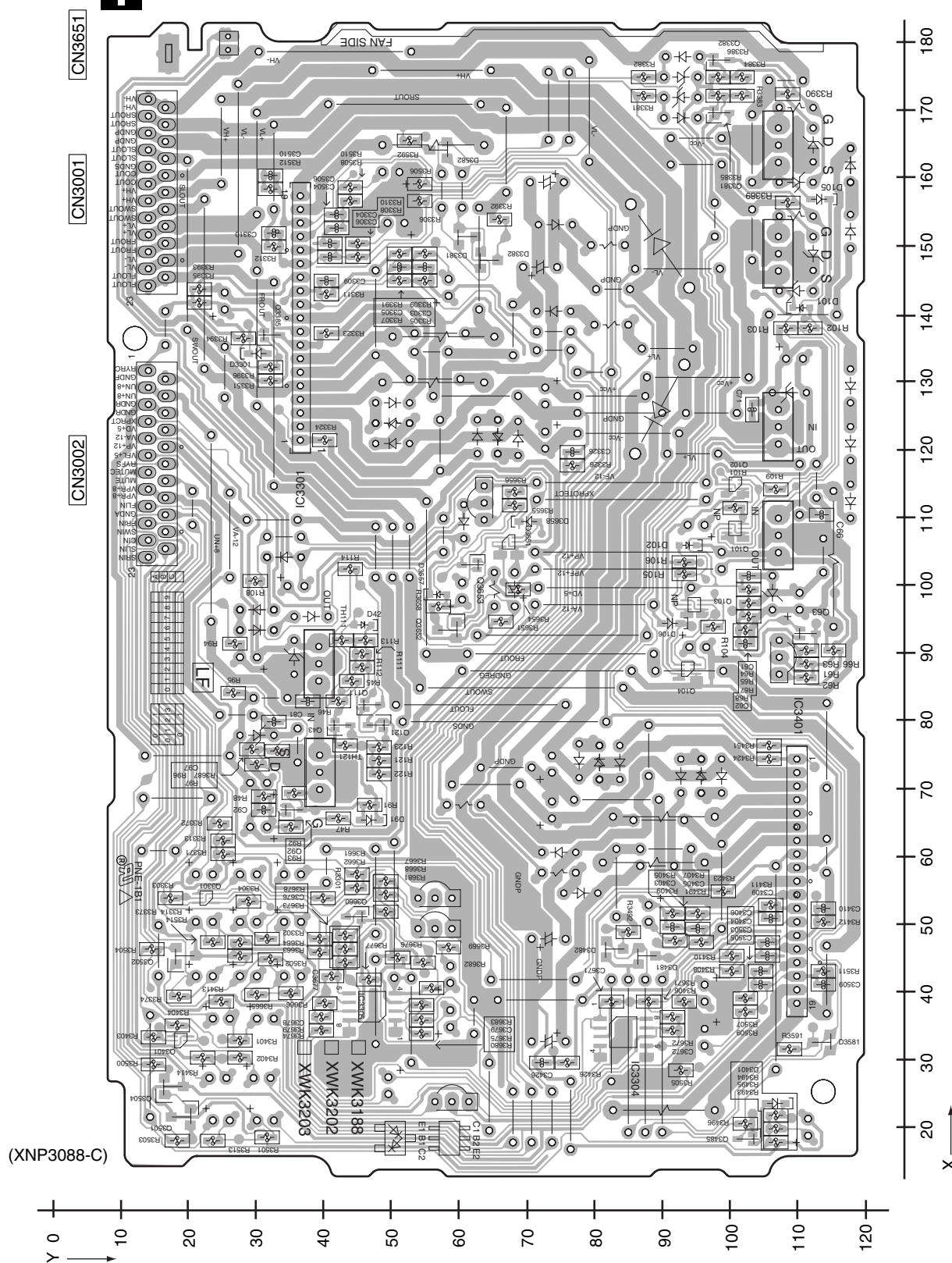
SIDE A

AMP ASSY



**SIDE B****SIDEB**

## AMP ASSY



## 4.6 POWER ASSY

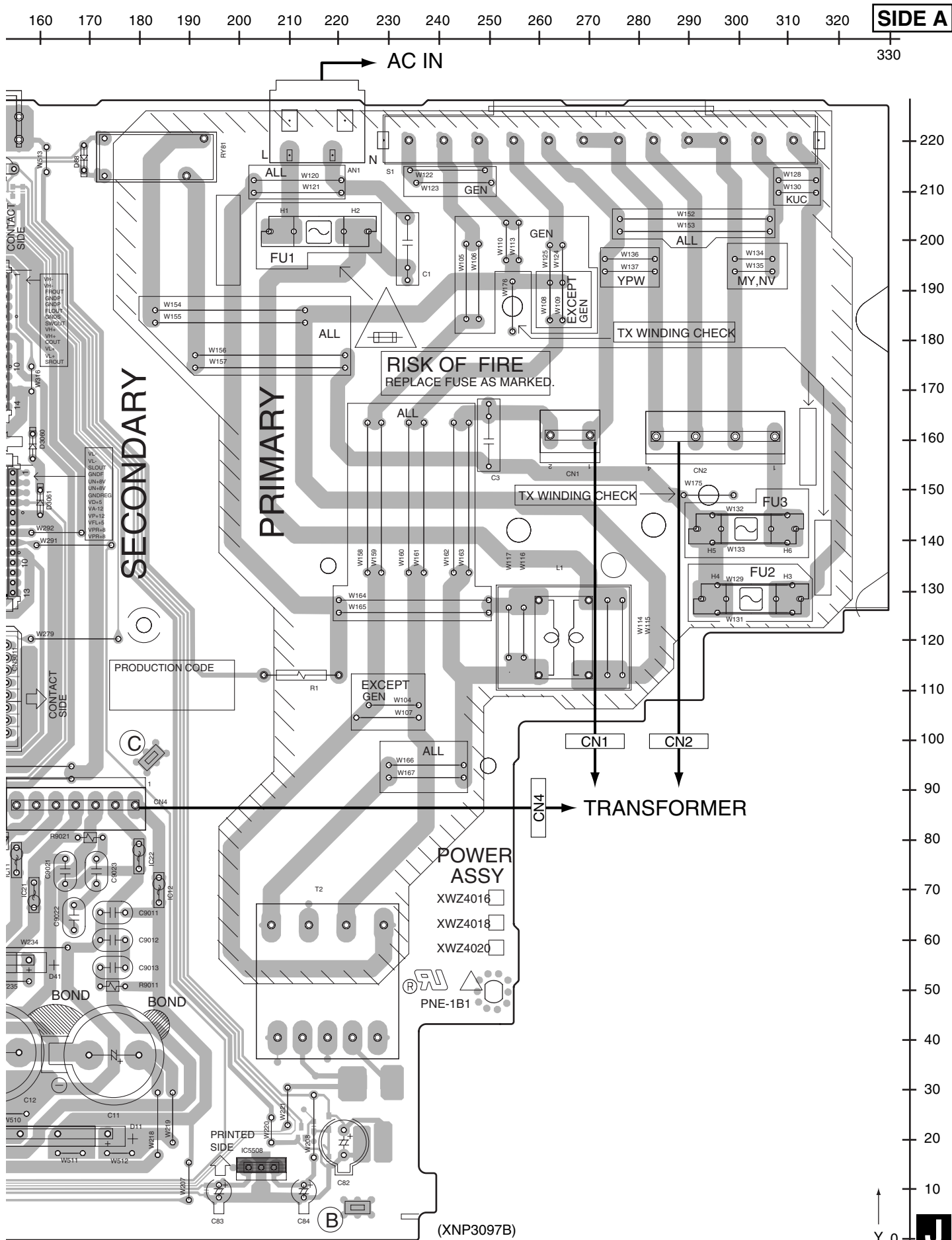
**SIDE A**

# POWER ASSY

FC  
ICT

**ATTENTION**  
REEMPLACER LE IC  
LINKS COMME  
INDIQUE. DE CHEZ  
LITTELFUSE INC.

**CAUTION**  
REPLACE IC LINK  
MARKED MFD BY  
ITT/ELFUSE INC.



## SIDE B

**J** POWER ASSY

**A**

330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

B

C

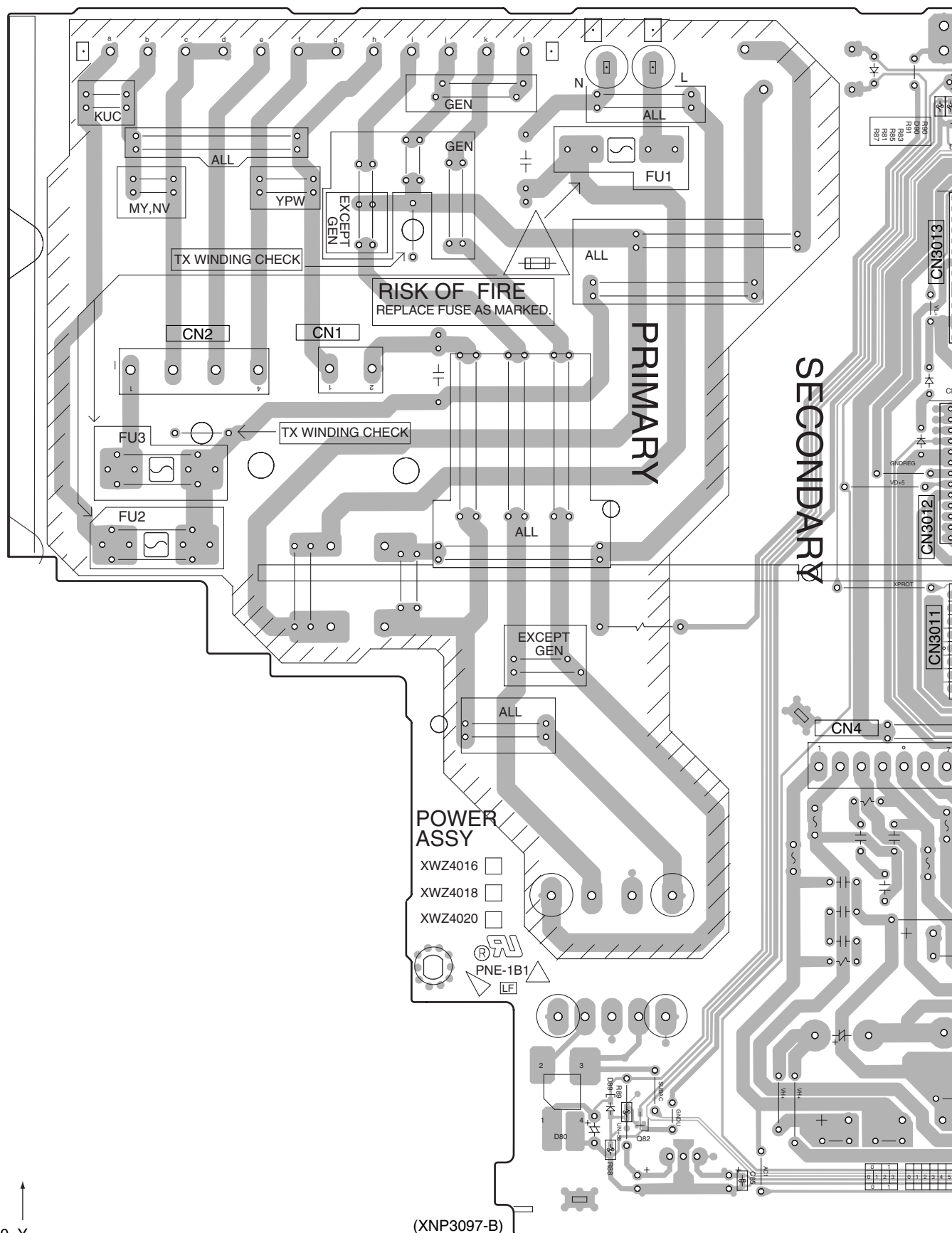
D

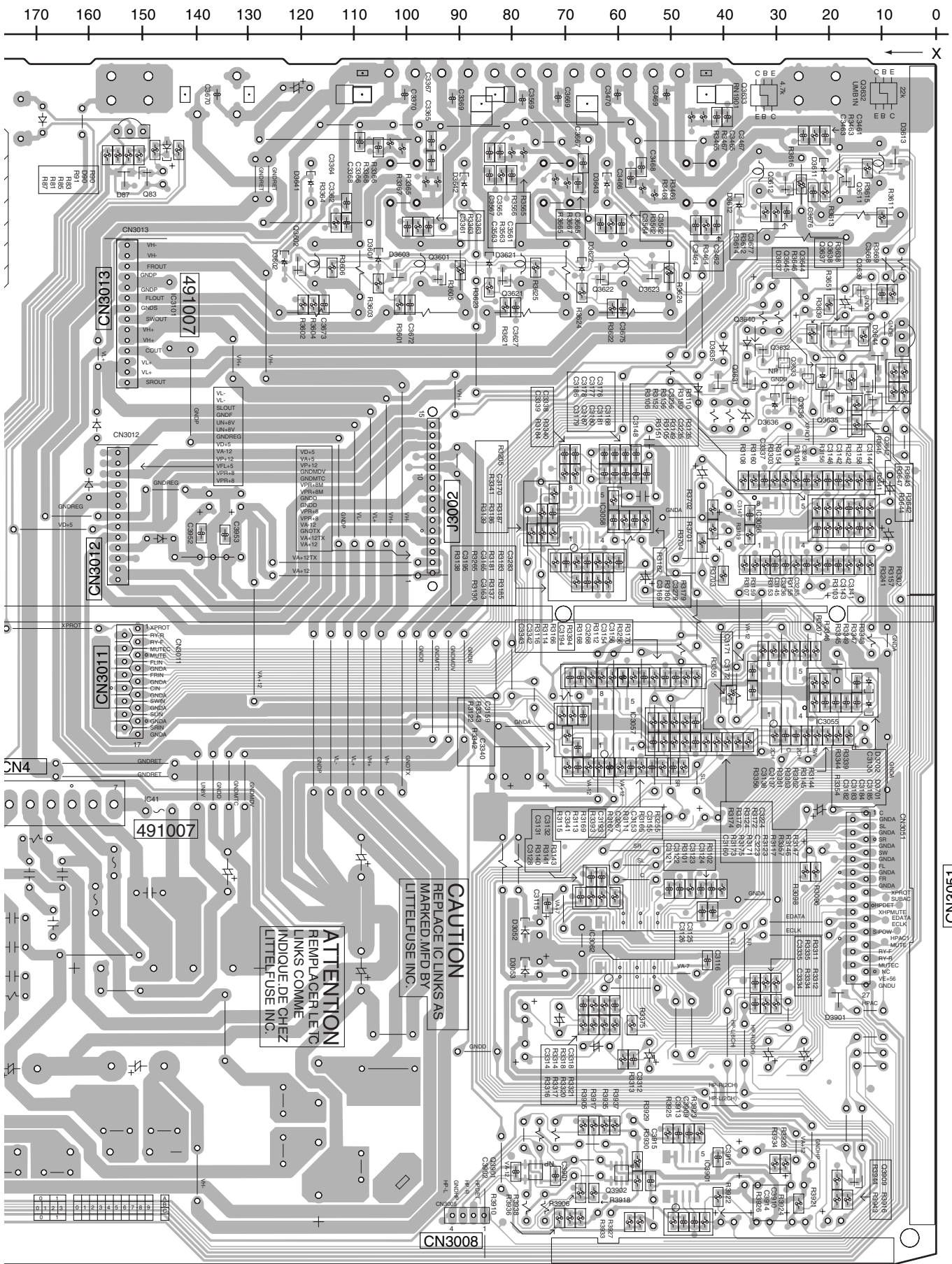
E

F

**J**

0 Y





△

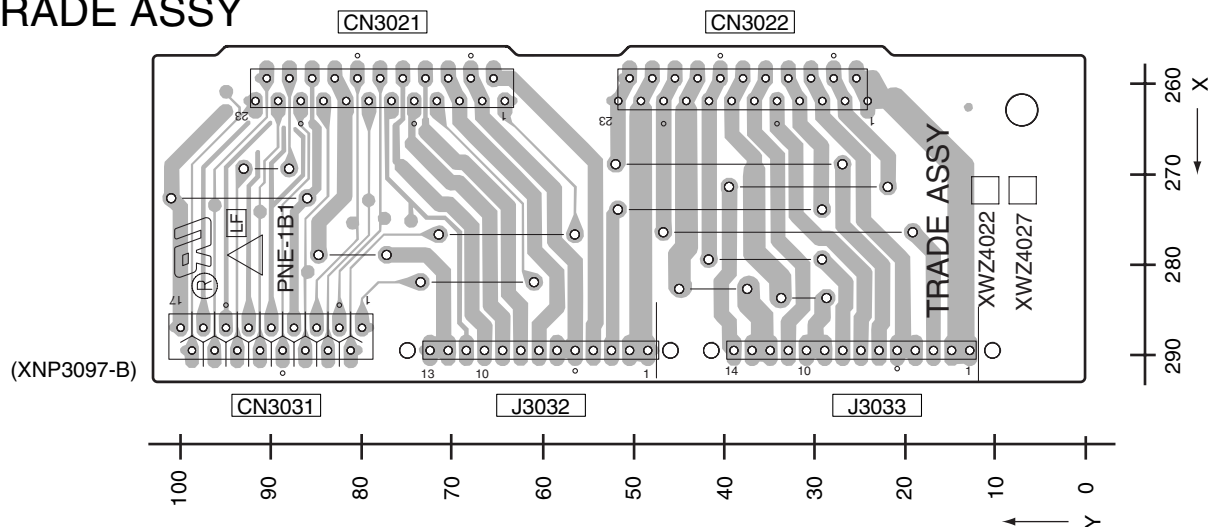
F



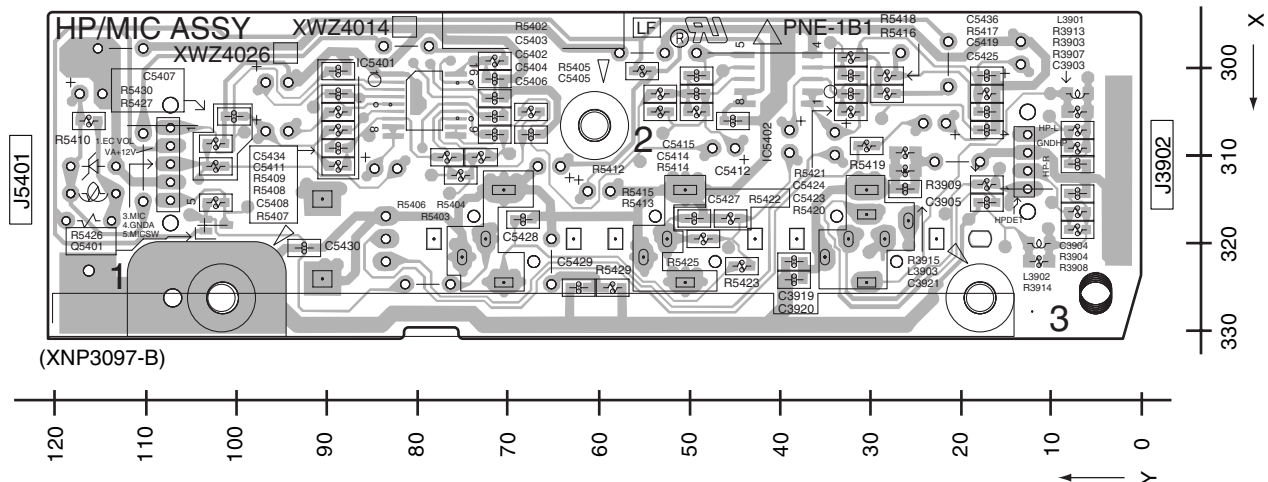
SIDE B

SIDE B

# K TRADE ASSY



# H HP/MIC ASSY



H K

H K

# 5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

●When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560  $\Omega$   $\rightarrow$  56 x 10<sup>1</sup>  $\rightarrow$  561 ..... RD1/4PU 561 J

47k  $\Omega$   $\rightarrow$  47 x 10<sup>3</sup>  $\rightarrow$  473 ..... RD1/4PU 473 J

0.5  $\Omega$   $\rightarrow$  R50 ..... RN2H R50 K

1  $\Omega$   $\rightarrow$  1R0 ..... RS1P 1R0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k  $\Omega$   $\rightarrow$  562 x 10<sup>1</sup>  $\rightarrow$  5621 ..... RN1/4PC 5621 F

| Mark No. | Description | Part No. |
|----------|-------------|----------|
|----------|-------------|----------|

## LIST OF ASSEMBLIES

|     |                   |         |
|-----|-------------------|---------|
| NSP | 1..DVD ASSY       | XXA3036 |
|     | 2..DVD M ASSY     | AWM7966 |
| NSP | 2..05 LOADER ASSY | VWT1219 |
|     | 3..LOAB ASSY      | VWG2346 |
| NSP | 1..MEDIA ASSY     | XWM3300 |
|     | 2..IFAF ASSY      | XWZ4009 |
|     | 2..DISPLAY ASSY   | XWZ4010 |
|     | 2..KEY ASSY       | XWZ4013 |
|     | 2..LED ASSY       | XWZ4023 |

| Mark No. | Description | Part No. |
|----------|-------------|----------|
|----------|-------------|----------|

|     |                     |         |
|-----|---------------------|---------|
| NSP | 1..COMPLEX ASSY     | XWK3197 |
|     | 2..HP/MIC ASSY      | XWZ4026 |
|     | 2..POWER ASSY       | XWZ4020 |
|     | 2..TRADE ASSY       | XWZ4027 |
| NSP | 1..AMP UNIT 2CH     | XXQ3006 |
|     | 2..AMP ASSY         | XWK3203 |
|     | 1..FM/AM TUNER UNIT | AXX7173 |

## ● FM/AM TUNER UNIT

This assembly has no service parts.

| Mark No. | Description | Part No. |
|----------|-------------|----------|
|----------|-------------|----------|

## A LOAB ASSY MISCELLANEOUS

|                 |          |
|-----------------|----------|
| S 101           | VSK1011  |
| CN602 CONNECTOR | S2B-PH-K |
| CN601 CONNECTOR | S5B-PH-K |

| Mark No. | Description | Part No. |
|----------|-------------|----------|
|----------|-------------|----------|

|                            |                    |           |
|----------------------------|--------------------|-----------|
| Q 481 (A,100 ,7 )          | CHIP TRANSISTOR    | DTC114YUA |
| Q 501 (A,103 ,56 )         | TRANSISTOR         | 2SD2114K  |
| Q 502 (A,94 ,56 )          | TRANSISTOR         | 2SD2114K  |
| Q 503 (A,105 ,69 )         | CHIP TRANSISTOR    | DTC114YUA |
| Q 504 (A,108 ,69 )         | CHIP TRANSISTOR    | DTC114YUA |
| Q 505 (A,98 ,53 )          | TRANSISTOR         | 2SA1576A  |
| Q 506 (A,114 ,69 )         | CHIP TRANSISTOR    | DTC114YUA |
| Q 701 (A,24 ,134 )         | TRANSISTOR         | 2SA1576A  |
| Q 702 (A,27 ,129 )         | DIGITAL TRANSISTOR | DTC124EUA |
| $\Delta$ Q 732 (B,22 ,90 ) | FET                | RSQ035P03 |

## B DVD M ASSY MISCELLANEOUS

|                     |               |                 |
|---------------------|---------------|-----------------|
| IC 101 (A,62 ,106 ) | 6CH DRIVER IC | BD7995EFS       |
| IC 201 (A,50 ,44 )  | DVD IC        | MT1389FE/C2-L   |
| IC 202 (B,34 ,25 )  | IC            | K4S641632H-TC75 |
| IC 203 (B,34 ,54 )  | FLASH ROM     | AYW7069         |
| IC 204 (A,19 ,44 )  | EEPROM        | S-24CS04AFJ     |

|                   |                    |           |
|-------------------|--------------------|-----------|
| Q 801 (A,50 ,87 ) | DIGITAL TRANSISTOR | DTC124EUA |
| Q 821 (A,42 ,86 ) | TRANSISTOR         | 2SA1576A  |
| Q 851 (A,42 ,89 ) | TRANSISTOR         | 2SA1576A  |
| Q 881 (A,42 ,93 ) | TRANSISTOR         | 2SA1576A  |
| D 731 (A,29 ,87 ) | DIODE              | 1SS355    |

|                              |                     |            |
|------------------------------|---------------------|------------|
| IC 401 (B,92 ,22 )           | DVD VIDEO AMP IC    | MM1623BF   |
| IC 501 (A,98 ,71 )           | D/A CONVERTER       | PCM1753DBQ |
| $\Delta$ IC 711 (A,33 ,74 )  | REGULATOR (1.8)     | MM1661JH   |
| $\Delta$ IC 731 (A,29 ,92 )  | DC/DC CONTROLLER IC | R1224N102H |
| $\Delta$ IC 751 (A,32 ,113 ) | REGULATOR IC (5.0)  | MM1565AF   |

|                   |       |            |
|-------------------|-------|------------|
| D 732 (B,18 ,92 ) | DIODE | RSX201L-30 |
| D 733 (A,24 ,94 ) | DIODE | 1SS355     |
| D 801 (A,50 ,85 ) | DIODE | UDZS4R7(B) |
| D 821 (A,46 ,86 ) | DIODE | 1SS355     |
| D 851 (A,46 ,89 ) | DIODE | 1SS355     |

|                              |                     |          |
|------------------------------|---------------------|----------|
| $\Delta$ IC 761 (A,41 ,119 ) | REGULATOR (ADJ.)    | BA3948FP |
| Q 304 (A,77 ,127 )           | TRANSISTOR          | 2SC4081  |
| Q 305 (A,84 ,125 )           | NMOS FET TRANSISTOR | UM5K1N   |
| Q 307 (A,71 ,87 )            | CHIP TRANSISTOR     | HN1A01F  |
| Q 308 (A,63 ,87 )            | CHIP TRANSISTOR     | HN1A01F  |

|                    |                     |         |
|--------------------|---------------------|---------|
| D 852 (A,42 ,82 )  | DIODE               | 1SS355  |
| D 861 (A,46 ,82 )  | DIODE               | 1SS355  |
| D 862 (A,46 ,83 )  | DIODE               | 1SS355  |
| D 881 (A,46 ,93 )  | DIODE               | 1SS355  |
| L 731 (A,23 ,109 ) | POWER INDUCTOR(22U) | DTL1099 |

| 5                   |                              |             | 6                  |               |              | 7                  |             |              | 8        |             |          |
|---------------------|------------------------------|-------------|--------------------|---------------|--------------|--------------------|-------------|--------------|----------|-------------|----------|
| Mark No.            | Description                  | Part No.    | Mark No.           | Description   | Part No.     | Mark No.           | Description | Part No.     | Mark No. | Description | Part No. |
| L 732 (A,22 ,84 )   | POWER INDUCTOR               | ATH7011     | R 249 (B,59 ,40 )  |               | RS1/16S103J  | R 249 (B,59 ,40 )  |             | RS1/16S103J  |          |             |          |
| L 751 (A,34 ,99 )   | CHIP BEADS                   | VTL1095     | R 251 (A,70 ,47 )  |               | RS1/16S104J  | R 251 (A,70 ,47 )  |             | RS1/16S104J  |          |             |          |
| L 901 (B,44 ,129 )  | CHIP BEADS                   | VTL1075     | R 252 (A,68 ,45 )  |               | RS1/16S0R0J  | R 252 (A,68 ,45 )  |             | RS1/16S0R0J  |          |             |          |
| X 201 (A,77 ,45 )   | CRYSTAL RESONATOR<br>(27MHz) | VSS1172     |                    |               |              |                    |             |              |          |             |          |
| CN101 (A,88 ,140 )  | 0.5-24P CONNECTER            | VKN1482     | R 253 (A,70 ,45 )  |               | RS1/16S681J  | R 253 (A,70 ,45 )  |             | RS1/16S681J  |          |             | A        |
| CN102 (A,69 ,142 )  | 12P CONNECTOR                | AKN7031     | R 254 (B,65 ,48 )  |               | RS1/16S754J  | R 254 (B,65 ,48 )  |             | RS1/16S754J  |          |             |          |
| CN103 (A,103 ,139 ) | 04P CONNECTOR                | RKN1045     | R 255 (B,57 ,52 )  |               | RS1/16S104J  | R 255 (B,57 ,52 )  |             | RS1/16S104J  |          |             |          |
| CN104 (A,79 ,9 )    | CONNECTOR                    | AKM1291     | R 256 (A,73 ,59 )  |               | RS1/16S153J  | R 256 (A,73 ,59 )  |             | RS1/16S153J  |          |             |          |
| CN901 (A,42 ,142 )  | 25P CONNECTOR                | VKN1317     | R 257 (B,64 ,42 )  |               | RS1/16S0R0J  | R 257 (B,64 ,42 )  |             | RS1/16S0R0J  |          |             |          |
| CN902 (A,116 ,28 )  | 27P CONNECTOR                | VKN1319     | R 258 (A,23 ,39 )  |               | RS1/16S330J  | R 258 (A,23 ,39 )  |             | RS1/16S330J  |          |             |          |
| <b>RESISTORS</b>    |                              |             | R 259 (A,26 ,39 )  |               | RS1/16S330J  | R 259 (A,26 ,39 )  |             | RS1/16S330J  |          |             |          |
| R 131 (A,61 ,95 )   |                              | RS1/10S4R7J | R 260 (A,24 ,37 )  |               | RS1/16S330J  | R 260 (A,24 ,37 )  |             | RS1/16S330J  |          |             |          |
| R 132 (A,63 ,95 )   |                              | RS1/10S4R7J | R 261 (A,27 ,38 )  |               | RS1/16S330J  | R 261 (A,27 ,38 )  |             | RS1/16S330J  |          |             |          |
| R 133 (A,66 ,95 )   |                              | RS1/10S4R7J | R 266 (B,51 ,38 )  |               | RS1/16S330J  | R 266 (B,51 ,38 )  |             | RS1/16S330J  |          |             |          |
| R 134 (A,65 ,95 )   |                              | RS1/10S4R7J |                    |               |              |                    |             |              |          |             |          |
| R 135 (A,68 ,95 )   |                              | RS1/10S4R7J | R 268 (B,68 ,37 )  |               | RS1/16S101J  | R 268 (B,68 ,37 )  |             | RS1/16S101J  |          |             | B        |
| R 136 (A,70 ,95 )   |                              | RS1/10S4R7J | R 269 (A,73 ,33 )  |               | RS1/16S102J  | R 269 (A,73 ,33 )  |             | RS1/16S102J  |          |             |          |
| R 151 (A,59 ,117 )  |                              | RS1/10S1R0J | R 270 (A,73 ,35 )  |               | RS1/16S102J  | R 270 (A,73 ,35 )  |             | RS1/16S102J  |          |             |          |
| R 152 (A,59 ,121 )  |                              | RS1/10S1R8J | R 279 (A,63 ,25 )  | CHIP RESISTOR | RS1/16S2201F | R 279 (A,63 ,25 )  |             | RS1/16S2201F |          |             |          |
| R 153 (A,57 ,117 )  |                              | RS1/10S1R0J | R 281 (B,19 ,33 )  |               | RS1/10S0R0J  | R 281 (B,19 ,33 )  |             | RS1/10S0R0J  |          |             |          |
| R 154 (A,57 ,121 )  |                              | RS1/10S1R8J |                    |               |              |                    |             |              |          |             |          |
| R 200 (A,25 ,56 )   |                              | RS1/10S0R0J | R 284 (A,34 ,61 )  |               | RS1/16S103J  | R 284 (A,34 ,61 )  |             | RS1/16S103J  |          |             |          |
| R 201 (A,49 ,67 )   |                              | RS1/16S152J | R 301 (B,89 ,136 ) |               | RS1/10S0R0J  | R 301 (B,89 ,136 ) |             | RS1/10S0R0J  |          |             |          |
| R 202 (A,48 ,67 )   |                              | RS1/16S223J | R 302 (B,86 ,136 ) |               | RS1/10S0R0J  | R 302 (B,86 ,136 ) |             | RS1/10S0R0J  |          |             |          |
| R 204 (A,47 ,67 )   |                              | RS1/16S223J | R 303 (B,87 ,133 ) |               | RS1/10S0R0J  | R 303 (B,87 ,133 ) |             | RS1/10S0R0J  |          |             |          |
| R 205 (A,45 ,67 )   |                              | RS1/16S184J | R 313 (A,80 ,125 ) |               | RS1/16S104J  | R 313 (A,80 ,125 ) |             | RS1/16S104J  |          |             |          |
| R 206 (A,46 ,64 )   |                              | RS1/16S224J |                    |               |              |                    |             |              |          |             |          |
| R 207 (A,65 ,60 )   |                              | RS1/10S0R0J | R 314 (A,75 ,125 ) |               | RS1/16S103J  | R 314 (A,75 ,125 ) |             | RS1/16S103J  |          |             |          |
| R 208 (B,27 ,71 )   |                              | RS1/10S0R0J | R 315 (A,80 ,128 ) |               | RS1/16S103J  | R 315 (A,80 ,128 ) |             | RS1/16S103J  |          |             | C        |
| R 209 (A,57 ,16 )   |                              | RS1/10S0R0J | R 318 (A,80 ,126 ) |               | RS1/16S104J  | R 318 (A,80 ,126 ) |             | RS1/16S104J  |          |             |          |
| R 212 (A,40 ,70 )   |                              | RS1/16S103J | R 321 (A,61 ,87 )  |               | RS1/16S4R7J  | R 321 (A,61 ,87 )  |             | RS1/16S4R7J  |          |             |          |
| R 213 (A,41 ,70 )   |                              | RS1/16S103J | R 322 (A,73 ,87 )  |               | RS1/16S4R7J  | R 322 (A,73 ,87 )  |             | RS1/16S4R7J  |          |             |          |
| R 214 (A,45 ,72 )   |                              | RS1/16S0R0J |                    |               |              |                    |             |              |          |             |          |
| R 216 (A,36 ,62 )   |                              | RS1/16S0R0J | R 325 (A,68 ,87 )  |               | RS1/16S4R7J  | R 325 (A,68 ,87 )  |             | RS1/16S4R7J  |          |             |          |
| R 217 (A,31 ,61 )   |                              | RS1/10S0R0J | R 326 (A,66 ,87 )  |               | RS1/16S4R7J  | R 326 (A,66 ,87 )  |             | RS1/16S4R7J  |          |             |          |
| R 218 (A,18 ,37 )   |                              | RS1/16S103J | R 401 (A,82 ,30 )  |               | RS1/16S103J  | R 401 (A,82 ,30 )  |             | RS1/16S103J  |          |             |          |
| R 219 (A,18 ,35 )   |                              | RS1/16S103J | R 402 (B,99 ,14 )  |               | RS1/16S103J  | R 402 (B,99 ,14 )  |             | RS1/16S103J  |          |             |          |
| R 221 (A,25 ,44 )   |                              | RS1/16S330J | R 403 (B,99 ,13 )  |               | RS1/16S0R0J  | R 403 (B,99 ,13 )  |             | RS1/16S0R0J  |          |             |          |
| R 223 (A,29 ,35 )   |                              | RS1/16S330J |                    |               |              |                    |             |              |          |             |          |
| R 224 (A,29 ,49 )   |                              | RS1/16S330J | R 404 (A,83 ,25 )  |               | RS1/16S102J  | R 404 (A,83 ,25 )  |             | RS1/16S102J  |          |             |          |
| R 225 (A,40 ,23 )   | CHIP RESISTOR ARRAY          | RAB4C330J   | R 411 (A,69 ,23 )  |               | RS1/16S1500F | R 411 (A,69 ,23 )  |             | RS1/16S1500F |          |             | D        |
| R 226 (A,43 ,23 )   |                              | RS1/16S330J | R 412 (A,70 ,23 )  |               | RS1/16S1500F | R 412 (A,70 ,23 )  |             | RS1/16S1500F |          |             |          |
| R 227 (A,44 ,23 )   |                              | RS1/16S330J | R 413 (A,67 ,23 )  |               | RS1/16S1500F | R 413 (A,67 ,23 )  |             | RS1/16S1500F |          |             |          |
| R 229 (A,48 ,24 )   |                              | RS1/16S330J | R 414 (A,71 ,23 )  |               | RS1/16S1500F | R 414 (A,71 ,23 )  |             | RS1/16S1500F |          |             |          |
| R 230 (B,71 ,35 )   |                              | RS1/16S101J | R 415 (A,73 ,23 )  |               | RS1/16S1500F | R 415 (A,73 ,23 )  |             | RS1/16S1500F |          |             |          |
| R 231 (B,71 ,37 )   |                              | RS1/16S101J | R 416 (A,74 ,23 )  |               | RS1/16S0R0J  | R 416 (A,74 ,23 )  |             | RS1/16S0R0J  |          |             |          |
| R 232 (A,34 ,60 )   |                              | RS1/16S0R0J | R 421 (B,102 ,15 ) |               | RS1/16S0R0J  | R 421 (B,102 ,15 ) |             | RS1/16S0R0J  |          |             |          |
| R 233 (B,42 ,50 )   |                              | RS1/16S0R0J | R 422 (B,99 ,20 )  |               | RS1/16S0R0J  | R 422 (B,99 ,20 )  |             | RS1/16S0R0J  |          |             |          |
| R 234 (A,26 ,42 )   |                              | RS1/16S330J | R 423 (B,99 ,21 )  |               | RS1/16S0R0J  | R 423 (B,99 ,21 )  |             | RS1/16S0R0J  |          |             |          |
| R 235 (A,26 ,41 )   |                              | RS1/16S472J |                    |               |              |                    |             |              |          |             |          |
| R 237 (A,23 ,41 )   |                              | RS1/16S330J | R 424 (B,99 ,23 )  |               | RS1/16S0R0J  | R 424 (B,99 ,23 )  |             | RS1/16S0R0J  |          |             |          |
| R 238 (B,60 ,35 )   |                              | RS1/16S103J | R 425 (B,99 ,25 )  |               | RS1/16S0R0J  | R 425 (B,99 ,25 )  |             | RS1/16S0R0J  |          |             |          |
| R 241 (A,71 ,36 )   |                              | RS1/16S330J | R 426 (B,99 ,29 )  |               | RS1/16S0R0J  | R 426 (B,99 ,29 )  |             | RS1/16S0R0J  |          |             |          |
| R 242 (A,71 ,37 )   |                              | RS1/16S330J | R 481 (A,103 ,7 )  |               | RS1/16S102J  | R 481 (A,103 ,7 )  |             | RS1/16S102J  |          |             | E        |
| R 243 (A,69 ,39 )   |                              | RS1/16S100J | R 501 (A,91 ,64 )  |               | RS1/16S0R0J  | R 501 (A,91 ,64 )  |             | RS1/16S0R0J  |          |             |          |
| R 244 (A,69 ,41 )   |                              | RS1/16S330J |                    |               |              |                    |             |              |          |             |          |
| R 247 (B,58 ,37 )   |                              | RS1/16S103J | R 503 (A,92 ,73 )  |               | RS1/16S101J  | R 503 (A,92 ,73 )  |             | RS1/16S101J  |          |             |          |
| R 248 (B,58 ,46 )   |                              | RS1/16S330J | R 504 (A,92 ,74 )  |               | RS1/16S101J  | R 504 (A,92 ,74 )  |             | RS1/16S101J  |          |             |          |
|                     |                              |             | R 505 (A,94 ,74 )  |               | RS1/16S101J  | R 505 (A,94 ,74 )  |             | RS1/16S101J  |          |             |          |
|                     |                              |             | R 506 (A,101 ,74 ) |               | RS1/16S220J  | R 506 (A,101 ,74 ) |             | RS1/16S220J  |          |             |          |
|                     |                              |             | R 507 (A,104 ,74 ) |               | RS1/16S101J  | R 507 (A,104 ,74 ) |             | RS1/16S101J  |          |             |          |
|                     |                              |             |                    |               |              |                    |             |              |          |             |          |
|                     |                              |             | R 508 (A,104 ,73 ) |               | RS1/16S101J  | R 508 (A,104 ,73 ) |             | RS1/16S101J  |          |             |          |
|                     |                              |             | R 509 (A,104 ,72 ) |               | RS1/16S101J  | R 509 (A,104 ,72 ) |             | RS1/16S101J  |          |             |          |
|                     |                              |             | R 511 (A,100 ,60 ) |               | RS1/16S223J  | R 511 (A,100 ,60 ) |             | RS1/16S223J  |          |             |          |
|                     |                              |             | R 512 (A,97 ,60 )  |               | RS1/16S223J  | R 512 (A,97 ,60 )  |             | RS1/16S223J  |          |             |          |
|                     |                              |             | R 513 (A,103 ,59 ) |               | RS1/16S471J  | R 513 (A,103 ,59 ) |             | RS1/16S471J  |          |             | F        |
|                     |                              |             |                    |               |              |                    |             |              |          |             |          |
|                     |                              |             | R 514 (A,95 ,59 )  |               | RS1/16S471J  | R 514 (A,95 ,59 )  |             | RS1/16S471J  |          |             |          |
|                     |                              |             | R 515 (A,99 ,56 )  |               | RS1/16S222J  | R 515 (A,99 ,56 )  |             | RS1/16S222J  |          |             |          |

**Mark No. Description****Part No.****Mark No. Description****Part No.**

R 516 (A,98,56)  
R 517 (B,105,68)  
R 518 (A,101,52)

RS1/16S222J  
RS1/16S102J  
RS1/16S102J

C 101 (A,49,120)  
C 102 (A,73,101)  
C 103 (A,66,116)  
C 104 (A,61,117)  
C 121 (B,61,112)

CEVW101M16  
CKSRYB105K10  
CKSRYB105K10  
CKSRYB105K10  
CKSRYB105K10

R 519 (A,99,50)  
R 520 (A,111,69)  
R 521 (A,110,53)  
R 522 (A,112,53)  
R 591 (A,83,50)

RS1/16S103J  
RS1/16S102J  
RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S0R0J

C 131 (A,52,103)  
C 140 (A,60,137)  
C 144 (A,62,99)  
C 145 (A,64,98)  
C 146 (A,60,98)

CKSRYB104K25  
CKSRYB105K10  
CKSRYB222K50  
CKSRYB222K50  
CKSRYB222K50

R 592 (A,79,55)  
R 594 (A,80,72)  
R 701 (A,24,137)  
R 702 (A,27,134)  
R 732 (A,25,91)

RS1/16S100J  
RS1/16S0R0J  
RS1/16S473J  
RS1/16S103J  
RS1/10S100J

C 151 (A,68,114)  
C 152 (A,71,114)  
C 153 (A,73,111)  
C 161 (A,58,96)  
C 201 (A,21,52) CHIP ELECT.CAPACITOR

CKSRYB103K50  
CKSRYB103K50  
CKSRYB103K50  
CKSRYB102K50  
CEVW221M4

R 733 (A,25,93)  
R 734 (A,30,89)  
R 735 (A,29,84)  
R 736 (A,32,93)  
R 737 (A,31,83)

RS1/16S220J  
RS1/16S473J  
RS1/16S272J  
RS1/16S1802F  
RS1/16S2702F

C 202 (A,69,64) CHIP ELECT.CAPACITOR  
C 203 (A,55,78) CHIP ELECT.CAPACITOR  
C 204 (A,52,63)  
C 205 (B,52,69)  
C 206 (A,47,77) CHIP ELECT.CAPACITOR

CEVW221M4  
CEVW470M16  
CKSRYB104K25  
CKSRYB104K25  
CEVW470M16

R 738 (A,29,82)  
R 739 (A,19,78)  
R 740 (A,29,85)  
R 750 (A,30,99)  
R 751 (A,33,119)

RS1/16S1502F  
RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S0R0J

C 207 (B,53,55)  
C 208 (A,48,70)  
C 209 (A,50,70)  
C 210 (A,47,70)  
C 211 (A,46,70)

CKSRYB104K25  
CKSRYB222K50  
CKSRYB104K25  
CKSRYB222K50  
CCSRCH560J50

R 761 (A,37,114)  
R 762 (A,45,114)  
R 763 (A,44,112)  
R 764 (A,44,110)  
R 801 (A,54,85)

RS1/16S0R0J  
RS1/16S3902F  
RS1/16S334J  
RS1/16S334J  
RS1/16S471J

C 212 (A,44,70)  
C 213 (A,55,63)  
C 214 (B,50,54)  
C 215 (A,55,69) CHIP ELECT.CAPACITOR  
C 216 (A,46,62)

CCSRCH560J50  
CKSRYB104K25  
CKSRYB104K25  
CEVW470M16  
CKSRYB104K25

R 821 (A,42,83)  
R 822 (A,39,86)  
R 823 (A,36,86)  
R 824 (A,37,86)  
R 851 (A,39,89)

RS1/16S103J  
RS1/16S473J  
RS1/16S153J  
RS1/16S103J  
RS1/16S473J

C 217 (A,42,62)  
C 219 (A,36,61)  
C 220 (A,31,58)  
C 222 (A,29,53)  
C 223 (A,29,51)

CKSRYB104K25  
CKSRYB152K50  
CKSRYB104K25  
CKSRYB104K25  
CKSRYB104K25

R 852 (A,36,89)  
R 853 (A,37,89)  
R 881 (A,39,93)  
R 882 (A,36,93)  
R 901 (A,39,128)

RS1/16S103J  
RS1/16S103J  
RS1/16S473J  
RS1/16S103J  
RS1/16S0R0J

C 224 (A,25,45)  
C 225 (B,34,39)  
C 226 (B,40,39)  
C 227 (B,36,40)  
C 228 (B,39,37)

CKSRYB104K25  
CKSRYB104K25  
CKSRYB103K50  
CCSRCH221J50  
CKSRYB104K25

R 902 (B,40,131)  
R 903 (A,43,128)  
R 904 (A,41,128)  
R 905 (A,44,128)  
R 906 (A,42,126)

RS1/16S0R0J  
RS1/16S332J  
RS1/16S682J  
RS1/16S332J  
RS1/16S682J

C 230 (B,37,35)  
C 231 (B,42,35)  
C 232 (B,46,36)  
C 233 (B,49,33)  
C 234 (B,52,33)

CKSRYB102K50  
CKSRYB104K25  
CKSRYB104K25  
CKSRYB104K25  
CKSRYB104K25

R 907 (A,46,128)  
R 908 (A,47,128)  
R 909 (A,46,125)  
R 910 (A,48,128)  
R 911 (A,50,128)

RS1/16S471J  
RS1/16S332J  
RS1/16S682J  
RS1/16S221J  
RS1/16S221J

C 235 (B,55,35)  
C 236 (B,56,33)  
C 237 (A,65,16) CHIP ELECT.CAPACITOR  
C 239 (B,60,34)  
C 240 (B,59,39)

CKSRYB104K25  
CKSRYB104K25  
CEVW221M4  
CKSRYB104K25  
CKSRYB104K25

R 912 (A,53,128)  
R 916 (B,47,128)  
R 917 (B,44,125)  
R 921 (A,106,7)  
R 922 (A,106,8)

RS1/16S0R0J  
RS1/16S223J  
RS1/16S223J  
RS1/16S0R0J  
RS1/16S0R0J

C 241 (B,61,43)  
C 243 (A,61,25)  
C 244 (A,60,25)  
C 245 (B,61,31)  
C 246 (B,63,32)

CKSRYB104K25  
CKSRYB105K10  
CKSRYB104K25  
CKSRYB104K25  
CKSRYB104K25

R 923 (A,105,10)  
R 924 (A,105,11)  
R 1001(B,107,6)  
R 1002(B,116,16)  
R 1003(B,118,16)

RS1/16S0R0J  
RS1/16S0R0J  
RS1/10S0R0J  
RS1/10S0R0J  
RS1/10S0R0J

C 250 (B,64,36)  
C 251 (A,73,47)  
C 252 (A,73,44)  
C 253 (B,64,44)  
C 254 (B,64,48)

CKSRYB103K50  
CCSRCH8R0D50  
CCSRCH100D50  
CKSRYB104K25  
CCSRCH391J50

**CAPACITORS**

| 5        |                                  | 6            |  | 7                                                                                  |                              | 8            |   |
|----------|----------------------------------|--------------|--|------------------------------------------------------------------------------------|------------------------------|--------------|---|
| Mark No. | Description                      | Part No.     |  | Mark No.                                                                           | Description                  | Part No.     |   |
| C 255    | (B,65 ,53 )                      | CKSRYB474K10 |  | C 732                                                                              | (A,22 ,113 ) CHIP CERAMIC C. | DCH1165      |   |
| C 256    | (B,72 ,52 )                      | CEVW100M16   |  | C 733                                                                              | (A,20 ,105 ) CHIP CERAMIC C. | DCH1165      |   |
| C 257    | (B,60 ,49 )                      | CKSRYB104K25 |  | C 734                                                                              | (A,21 ,100 )                 | CEVW101M16   |   |
| C 258    | (A,69 ,49 )                      | CKSRYB473K50 |  | C 735                                                                              | (A,20 ,95 ) CHIP CERAMIC C.  | DCH1165      | A |
| C 259    | (A,72 ,50 )                      | CKSRYB473K50 |  | C 736                                                                              | (A,25 ,89 )                  | CKSRYB104K25 |   |
| C 260    | (B,60 ,50 )                      | CKSRYB104K25 |  | C 737                                                                              | (A,28 ,82 )                  | CCSRCH121J50 |   |
| C 265    | (A,73 ,53 )                      | CCSRCH220J50 |  | C 738                                                                              | (A,24 ,78 ) CHIP CERAMIC C.  | DCH1165      |   |
| C 266    | (B,60 ,52 )                      | CKSRYB104K25 |  | C 739                                                                              | (A,21 ,66 )                  | CEVW101M16   |   |
| C 267    | (A,70 ,53 )                      | CKSRYB102K50 |  | C 751                                                                              | (A,32 ,119 )                 | CKSRYB105K10 |   |
| C 268    | (A,73 ,56 )                      | CKSRYB104K25 |  | C 752                                                                              | (A,34 ,108 )                 | CCSRCH471J50 |   |
| C 269    | (A,72 ,56 )                      | CKSRYB333K16 |  | C 753                                                                              | (A,30 ,108 )                 | CKSQYB225K10 |   |
| C 271    | (A,70 ,57 )                      | CKSRYB104K25 |  | C 761                                                                              | (A,41 ,103 )                 | CEVW101M16   |   |
| C 272    | (A,70 ,58 )                      | CKSRYB104K25 |  | C 762                                                                              | (A,40 ,112 )                 | CKSRYB105K10 |   |
| C 273    | (A,69 ,60 )                      | CKSRYB104K25 |  | C 801                                                                              | (A,50 ,83 )                  | CKSRYB104K25 |   |
| C 281    | (B,18 ,27 ) CHIP ELECT.CAPACITOR | CEVW221M4    |  |                                                                                    |                              |              | B |
| C 282    | (B,22 ,31 )                      | CKSRYB105K10 |  |  |                              |              |   |
| C 283    | (B,46 ,33 )                      | CKSRYB104K25 |  |                                                                                    |                              |              |   |
| C 284    | (B,33 ,17 )                      | CKSRYB104K25 |  |                                                                                    |                              |              |   |
| C 285    | (B,27 ,17 )                      | CKSRYB104K25 |  |                                                                                    |                              |              |   |
| C 286    | (B,27 ,33 )                      | CKSRYB104K25 |  |                                                                                    |                              |              |   |
| C 287    | (B,31 ,33 )                      | CKSRYB104K25 |  |                                                                                    |                              |              |   |
| C 288    | (B,34 ,33 )                      | CKSRYB104K25 |  |                                                                                    |                              |              |   |
| C 289    | (B,34 ,40 )                      | CKSRYB105K10 |  |                                                                                    |                              |              |   |
| C 290    | (A,20 ,39 )                      | CKSRYB104K25 |  |                                                                                    |                              |              |   |
| C 296    | (B,34 ,42 )                      | CKSRYB102K50 |  |                                                                                    |                              |              |   |
| C 309    | (A,71 ,77 ) CHIP ELECT.CAPACITOR | CEVW470M16   |  | IC 2201(B,146 ,33 ) OP-AMP IC                                                      |                              | HA17558AF    |   |
| C 310    | (A,63 ,77 ) CHIP ELECT.CAPACITOR | CEVW470M16   |  | IC 2202(B,194 ,35 ) OP-AMP IC                                                      |                              | HA17558AF    |   |
| C 343    | (A,64 ,64 )                      | CKSRYB105K10 |  | IC 2203(B,136 ,17 ) OP-AMP IC                                                      |                              | HA17558AF    |   |
| C 344    | (A,60 ,64 )                      | CKSRYB105K10 |  | IC 2301(B,80 ,42 ) OP-AMP IC                                                       |                              | HA17558AF    |   |
| C 345    | (A,62 ,64 )                      | CKSRYB105K10 |  | IC 2401(B,56 ,18 ) OP-AMP IC                                                       |                              | HA17558AF    |   |
| C 346    | (A,63 ,64 )                      | CKSRYB105K10 |  | IC 5501(B,58 ,174 ) CPU                                                            |                              | PDC126A      |   |
| C 347    | (A,59 ,64 )                      | CKSRYB105K10 |  | IC 5801(B,25 ,86 ) LOGIC IC                                                        |                              | TC4094BFN    |   |
| C 371    | (A,94 ,134 )                     | CKSRYB104K25 |  | IC 8101(B,181 ,204 ) LOGIC IC                                                      |                              | HEF4052BT    | C |
| C 372    | (B,94 ,134 )                     | CKSRYB104K25 |  | IC 8111(B,161 ,174 ) OP-AMP IC                                                     |                              | HA17558AF    |   |
| C 373    | (A,99 ,127 )                     | CEVW101M16   |  | IC 8201(B,132 ,209 ) DIGITAL KEYCONTROL                                            |                              | M65847AFP    |   |
| C 401    | (B,90 ,9 )                       | CEVW101M16   |  | IC 8301(B,130 ,166 ) VOCAL FADER                                                   |                              | BA3838F      |   |
| C 402    | (B,97 ,11 )                      | CKSRYB104K25 |  | IC 8801(B,106 ,213 ) OP-AMP IC                                                     |                              | HA17558AF    |   |
| C 404    | (A,93 ,23 )                      | CEVW101M16   |  | Q 2251(B,180 ,11 ) TRANSISTOR(SC-59)                                               |                              | 2SC3052      |   |
| C 405    | (B,84 ,22 )                      | CKSRYB104K25 |  | Q 2252(B,180 ,18 ) TRANSISTOR(SC-59)                                               |                              | 2SC3052      |   |
| C 406    | (B,99 ,16 )                      | CKSRYB104K25 |  | Q 2253(B,175 ,24 ) TRANSISTOR(SC-59)                                               |                              | 2SC3052      |   |
| C 411    | (B,84 ,15 )                      | CKSRYB104K25 |  | Q 2254(B,174 ,29 ) TRANSISTOR(SC-59)                                               |                              | 2SA1235A     |   |
| C 412    | (B,84 ,18 )                      | CKSRYB105K10 |  | Q 2255(B,167 ,43 ) TRANSISTOR                                                      |                              | RT1N241M     |   |
| C 413    | (B,84 ,21 )                      | CKSRYB105K10 |  | Q 2261(B,209 ,42 ) TRANSISTOR                                                      |                              | 2SD2114K     |   |
| C 414    | (B,84 ,25 )                      | CKSRYB105K10 |  | Q 2262(B,217 ,25 ) TRANSISTOR                                                      |                              | 2SD2114K     | D |
| C 415    | (B,84 ,27 )                      | CKSRYB104K25 |  | Q 2263(B,201 ,49 ) DIGITAL TR(SC-70)                                               |                              | RT1N431M     |   |
| C 416    | (B,84 ,29 )                      | CKSRYB104K25 |  | Q 2301(A,45 ,38 ) N-FET                                                            |                              | 2SK373       |   |
| C 500    | (B,95 ,70 )                      | CKSRYB105K10 |  | Q 2302(A,45 ,43 ) N-FET                                                            |                              | 2SK373       |   |
| C 501    | (A,91 ,60 )                      | CKSRYB104K25 |  | Q 2303(B,58 ,35 ) TRANSISTOR                                                       |                              | DTC114TK     |   |
| C 503    | (A,86 ,65 )                      | CEVW101M16   |  | Q 2304(B,58 ,43 ) TRANSISTOR                                                       |                              | DTC114TK     |   |
| C 504    | (A,93 ,68 )                      | CKSRYB104K25 |  | Q 2351(B,103 ,54 ) DIGITAL TR(SC-70)                                               |                              | RT1P241M     |   |
| C 508    | (A,104 ,66 )                     | CKSRYB104K25 |  | Q 2352(B,118 ,54 ) TRANSISTOR                                                      |                              | RT1N241M     |   |
| C 509    | (A,106 ,62 )                     | CEVW100M16   |  | Q 2353(B,115 ,54 ) TRANSISTOR                                                      |                              | RT1N241M     |   |
| C 511    | (A,100 ,65 )                     | CEVW100M16   |  | Q 2451(B,96 ,9 ) TRANSISTOR                                                        |                              | 2SD2114K     |   |
| C 512    | (A,95 ,65 )                      | CEVW100M16   |  | Q 2452(B,96 ,22 ) TRANSISTOR                                                       |                              | 2SD2114K     |   |
| C 513    | (A,100 ,58 )                     | CKSRYB102K50 |  | Q 2453(B,129 ,49 ) TRANSISTOR                                                      |                              | RT1N241M     | E |
| C 514    | (A,97 ,58 )                      | CKSRYB102K50 |  | Q 2460(B,129 ,44 ) DIGITAL TR(SC-70)                                               |                              | RT1P241M     |   |
| C 701    | (A,24 ,131 )                     | CKSQYB105K16 |  | Q 2801(A,28 ,51 ) TRANSISTOR                                                       |                              | 2SC1815      |   |
| C 711    | (A,28 ,73 )                      | CKSRYB105K10 |  | Q 2802(A,28 ,42 ) TRANSISTOR                                                       |                              | 2SC1815      |   |
| C 712    | (A,35 ,78 )                      | CCSRCH471J50 |  | Q 2805(A,58 ,49 ) TRANSISTOR                                                       |                              | 2SC1815      |   |
| C 713    | (A,29 ,66 )                      | CKSQYB225K10 |  | Q 2806(A,20 ,17 ) TRANSISTOR                                                       |                              | 2SC2240      |   |
|          |                                  |              |  | Q 5402(A,105 ,164 ) P-FET                                                          |                              | 2SJ103       |   |
|          |                                  |              |  | Q 5501(B,32 ,194 ) DIGITAL TR(SC-70)                                               |                              | RT1N431M     |   |
|          |                                  |              |  | Q 5502(B,28 ,181 ) TRANSISTOR                                                      |                              | 2SC4081      |   |
|          |                                  |              |  | Q 5503(B,24 ,192 ) TRANSISTOR                                                      |                              | 2SC4081      |   |
|          |                                  |              |  | Q 5607(B,122 ,72 ) DIGITAL TR(SC-70)                                               |                              | RT1P431M     | F |
|          |                                  |              |  | Q 5701(B,203 ,82 ) TRANSISTOR                                                      |                              | 2SC4081      |   |
|          |                                  |              |  | Q 5801(B,15 ,90 ) TRANSISTOR                                                       |                              | 2SB1132      |   |

| Mark No. | Description                                  | Part No.   |
|----------|----------------------------------------------|------------|
| A        | Q 5802(B,27 ,102 ) DIGITAL TR(SC-70)         | RT1N431M   |
|          | Q 5803(B,31 ,95 ) DIGITAL TR(SC-70)          | RT1P241M   |
|          | Q 5804(B,16 ,83 ) TRANSISTOR                 | 2SB1132    |
|          | Q 5805(B,22 ,100 ) DIGITAL TR(SC-70)         | RT1N431M   |
|          | Q 5808(B,36 ,86 ) DIGITAL TR(SC-70)          | RT1N431M   |
|          | Q 8111(B,174 ,172 ) TRANSISTOR               | 2SC4081    |
|          | Q 8112(B,172 ,177 ) TRANSISTOR               | 2SC4081    |
|          | Q 8115(B,168 ,172 ) DIGITAL TR(SC-70)        | RT1P241M   |
|          | Q 8201(A,160 ,207 ) TRANSISTOR               | 2SD1858X   |
|          | Q 8501(B,213 ,175 ) TRANSISTOR               | IMX9       |
| B        | Q 8503(B,80 ,171 ) DIGITAL TR(SC-70)         | RT1P241M   |
|          | D 2201(A,169 ,32 ) DIODE                     | MTZJ6R2(B) |
|          | D 2252(B,180 ,33 ) DIODE                     | MA111      |
|          | D 2253(B,195 ,12 ) DIODE                     | MA111      |
|          | D 2254(B,193 ,12 ) DIODE                     | MA111      |
|          | D 2255(B,184 ,29 ) DIODE                     | MA111      |
|          | D 2256(A,177 ,36 ) DIODE                     | 1SS133     |
|          | D 2257(B,208 ,33 ) DIODE                     | MA111      |
|          | D 2258(B,205 ,30 ) DIODE                     | MA111      |
|          | D 2301(A,37 ,38 ) DIODE                      | 1SS133     |
| C        | D 2302(A,37 ,42 ) DIODE                      | 1SS133     |
|          | D 2303(A,34 ,33 ) DIODE                      | 1SS133     |
|          | D 2304(A,34 ,47 ) DIODE                      | 1SS133     |
|          | D 2305(A,50 ,34 ) DIODE                      | 1SS133     |
|          | D 2306(A,50 ,46 ) DIODE                      | 1SS133     |
|          | D 2307(B,61 ,43 ) DIODE                      | MA111      |
|          | D 5502(B,58 ,151 ) DIODE                     | MA111      |
|          | D 5701(B,198 ,79 ) DIODE                     | MA111      |
|          | D 5702(B,198 ,84 ) DIODE                     | MA111      |
|          | D 5705(B,201 ,87 ) DIODE                     | UDZS10(B)  |
| D        | D 5801(B,32 ,103 ) DIODE                     | MA111      |
|          | D 5952(B,23 ,110 ) DIODE                     | MA111      |
|          | D 5954(B,109 ,155 ) DIODE                    | MA111      |
|          | D 5955(A,101 ,155 ) DIODE                    | MTZJ5R6(B) |
|          | D 8201(A,152 ,197 ) DIODE                    | MTZJ5R6(B) |
|          | D 8501(B,83 ,171 ) DIODE                     | MA111      |
|          | D 8701(B,139 ,87 ) DIODE                     | MA111      |
|          | D 8702(B,143 ,87 ) DIODE                     | MA111      |
|          | D 8901(A,195 ,233 ) DIODE                    | MTZJ5R6(B) |
|          | D 8902(A,194 ,226 ) DIODE                    | MTZJ5R6(B) |
| E        | L 2401(A,36 ,13 ) COIL                       | RTF1004    |
|          | L 2402(A,36 ,22 ) COIL                       | RTF1004    |
|          | L 2403(A,73 ,9 ) COIL(4.7MH)                 | RTF1021    |
|          | L 2404(A,74 ,28 ) COIL(4.7MH)                | RTF1021    |
|          | L 2801(A,20 ,33 ) COIL                       | RTD1082    |
|          | L 2802(A,28 ,57 ) RADIAL INDUCTOR            | LRCA121J   |
|          | L 5501(A,32 ,184 ) AXIAL INDUCTOR            | LAU220J    |
|          | L 8861(B,220 ,210 ) CHIP BEADS               | VTL1089    |
|          | L 8871(B,220 ,199 ) CHIP BEADS               | VTL1089    |
|          | JA8850(A,236 ,198 ) JACK                     | VKB1168    |
| F        | KN5501(A,231 ,53 ) SCREW PLATE               | VNE1948    |
|          | VR2301(A,109 ,34 ) VR                        | PCP1028    |
|          | VR2302(A,109 ,45 ) VR                        | PCP1028    |
|          | VR2401(A,104 ,10 ) VR                        | PCP1028    |
|          | VR2402(A,104 ,20 ) VR                        | PCP1028    |
|          | VR2801(A,29 ,18 ) VR                         | PCP1032    |
|          | VR2802(A,29 ,28 ) VR                         | PCP1032    |
|          | X 5501(A,69 ,193 ) CERAMIC RESONATOR (10MHz) | ASS7034    |
|          | CN2301(A,42 ,43 ) CONNECTOR                  | B4B-PH     |

| Mark No.            | Description         | Part No.    |
|---------------------|---------------------|-------------|
| CN2302(A,29 ,7 )    | CONNECTOR POST      | B2B-PH      |
| CN2507(A,208 ,9 )   | CONNECTOR           | B3P-SHF-1AA |
| CN5102(A,71 ,237 )  | 25P CONNECTOR       | VKN1256     |
| CN5105(A,9 ,210 )   | 5P JUMPER CONNECTOR | 52147-0510  |
| CN5501(A,17 ,134 )  | CONNECTOR           | 52045-1345  |
| CN5503(A,17 ,104 )  | CONNECTOR           | 52045-1145  |
| CN5701(A,183 ,75 )  | CONNECTOR           | 52045-1145  |
| CN8301(A,136 ,236 ) | 27P CONNECTOR       | VKN1258     |
| CN8302(A,165 ,74 )  | 15PJUMPER CONNECTOR | 52147-1510  |
| CN8303(A,117 ,75 )  | 27P CONNECTOR       | 52045-2745  |
| CN8401(A,236 ,168 ) | PIN JACK(4P)        | AKB7015     |
| CN8830(A,236 ,221 ) | SOCKET              | AKP7179     |
| 3                   | PCB BINDER          | VEF1040     |
| 2                   | PCB BINDER          | VEF1040     |

### RESISTORS

|                    |             |
|--------------------|-------------|
| R 2205(B,186 ,9 )  | RS1/16S153J |
| R 2206(B,186 ,23 ) | RS1/16S153J |
| R 2207(B,186 ,13 ) | RS1/16S122J |
| R 2208(B,186 ,18 ) | RS1/16S122J |
| R 2209(B,141 ,27 ) | RS1/16S563J |
| R 2210(B,136 ,30 ) | RS1/16S222J |
| R 2212(B,145 ,41 ) | RS1/16S563J |
| R 2213(B,136 ,36 ) | RS1/16S222J |
| R 2214(B,136 ,9 )  | RS1/16S563J |
| R 2215(B,138 ,9 )  | RS1/16S222J |
| R 2216(B,135 ,24 ) | RS1/16S563J |
| R 2217(B,127 ,18 ) | RS1/16S222J |
| R 2222(B,117 ,30 ) | RS1/16S104J |
| R 2223(B,119 ,36 ) | RS1/16S104J |
| R 2241(B,207 ,26 ) | RS1/16S103J |
| R 2242(B,205 ,26 ) | RS1/16S103J |
| R 2243(B,190 ,34 ) | RS1/16S104J |
| R 2251(B,183 ,9 )  | RS1/16S102J |
| R 2252(B,183 ,22 ) | RS1/16S102J |
| R 2253(B,178 ,9 )  | RS1/16S102J |
| R 2254(B,177 ,18 ) | RS1/16S102J |
| R 2255(B,178 ,30 ) | RS1/16S102J |
| R 2256(B,180 ,27 ) | RS1/16S105J |
| R 2257(B,186 ,29 ) | RS1/16S101J |
| R 2259(B,195 ,7 )  | RS1/16S103J |
| R 2260(B,193 ,8 )  | RS1/16S103J |
| R 2261(B,209 ,25 ) | RS1/16S392J |
| R 2262(B,217 ,19 ) | RS1/16S392J |
| R 2263(B,212 ,25 ) | RS1/16S153J |
| R 2264(B,216 ,30 ) | RS1/16S153J |
| R 2265(B,188 ,25 ) | RS1/16S103J |
| R 2266(B,196 ,28 ) | RS1/16S123J |
| R 2267(B,200 ,40 ) | RS1/16S101J |
| R 2268(B,187 ,34 ) | RS1/16S101J |
| R 2269(B,191 ,44 ) | RS1/16S393J |
| R 2270(B,183 ,43 ) | RS1/16S102J |
| R 2271(B,200 ,28 ) | RS1/16S104J |
| R 2272(B,179 ,39 ) | RS1/16S154J |
| R 2273(B,184 ,39 ) | RS1/16S103J |
| R 2276(B,172 ,34 ) | RS1/16S472J |
| R 2277(B,174 ,34 ) | RS1/16S223J |
| R 2281(B,213 ,45 ) | RS1/16S222J |
| R 2282(B,217 ,21 ) | RS1/16S222J |
| R 2283(B,198 ,49 ) | RS1/16S472J |
| R 2291(B,169 ,28 ) | RS1/16S681J |

| 5                                                  |             | 6           |  | 7                  |             | 8           |   |
|----------------------------------------------------|-------------|-------------|--|--------------------|-------------|-------------|---|
| Mark No.                                           | Description | Part No.    |  | Mark No.           | Description | Part No.    |   |
| R 2301(B,41 ,33 )                                  |             | RS1/16S105J |  | R 5508(B,29 ,198 ) |             | RS1/16S103J |   |
| R 2302(B,51 ,49 )                                  |             | RS1/16S105J |  | R 5511(B,62 ,194 ) |             | RS1/16S221J | A |
| R 2303(B,62 ,38 )                                  |             | RS1/16S334J |  | R 5512(B,63 ,199 ) |             | RS1/16S221J |   |
| R 2304(B,64 ,41 )                                  |             | RS1/16S334J |  | R 5515(B,40 ,175 ) |             | RS1/16S123J |   |
| R 2305(B,82 ,32 )                                  |             | RS1/16S474J |  | R 5516(B,77 ,188 ) |             | RS1/16S221J |   |
| R 2306(B,79 ,53 )                                  |             | RS1/16S474J |  | R 5517(B,79 ,194 ) |             | RS1/16S221J |   |
| R 2307(B,84 ,32 )                                  |             | RS1/16S223J |  | R 5518(B,79 ,188 ) |             | RS1/16S221J |   |
| R 2308(B,83 ,52 )                                  |             | RS1/16S223J |  | R 5519(B,81 ,189 ) |             | RS1/16S221J |   |
| R 2311(B,87 ,40 )                                  |             | RS1/16S241J |  | R 5520(B,85 ,171 ) |             | RS1/16S221J |   |
| R 2312(B,79 ,49 )                                  |             | RS1/16S241J |  | R 5525(B,83 ,189 ) |             | RS1/16S221J |   |
| R 2319(B,105 ,33 )                                 |             | RS1/16S471J |  | R 5526(B,81 ,196 ) |             | RS1/16S221J |   |
| R 2320(B,105 ,43 )                                 |             | RS1/16S471J |  | R 5528(B,87 ,187 ) |             | RS1/16S221J |   |
| R 2351(B,122 ,48 )                                 |             | RS1/16S473J |  | R 5529(B,76 ,171 ) |             | RS1/16S221J |   |
| R 2352(B,100 ,51 )                                 |             | RS1/16S223J |  | R 5530(B,78 ,171 ) |             | RS1/16S221J | B |
| R 2399(B,58 ,39 )                                  |             | RS1/16S0R0J |  | R 5531(B,70 ,199 ) |             | RS1/16S473J |   |
| R 2401(B,106 ,10 )                                 |             | RS1/16S223J |  | R 5535(B,79 ,156 ) |             | RS1/16S221J |   |
| R 2402(B,108 ,20 )                                 |             | RS1/16S223J |  | R 5536(B,46 ,201 ) |             | RS1/16S221J |   |
| R 2403(B,100 ,9 )                                  |             | RS1/16S0R0J |  | R 5537(B,75 ,156 ) |             | RS1/16S221J |   |
| R 2404(B,100 ,27 )                                 |             | RS1/16S0R0J |  | R 5538(B,72 ,156 ) |             | RS1/16S221J |   |
| R 2409(B,65 ,14 )                                  |             | RS1/16S104J |  | R 5539(B,34 ,170 ) |             | RS1/16S221J |   |
| R 2410(B,64 ,18 )                                  |             | RS1/16S104J |  | R 5540(B,32 ,171 ) |             | RS1/16S221J |   |
| R 2411(B,58 ,11 )                                  |             | RS1/16S823J |  | R 5541(B,37 ,177 ) |             | RS1/16S472J |   |
| R 2412(B,58 ,26 )                                  |             | RS1/16S823J |  | R 5543(B,50 ,198 ) |             | RS1/16S221J |   |
| R 2413(B,56 ,7 )                                   |             | RS1/16S473J |  | R 5545(B,67 ,146 ) |             | RS1/16S221J |   |
| R 2414(B,56 ,29 )                                  |             | RS1/16S473J |  | R 5546(B,51 ,151 ) |             | RS1/16S221J | C |
| R 2415(B,71 ,13 )                                  |             | RS1/16S560J |  | R 5547(B,41 ,151 ) |             | RS1/16S221J |   |
| R 2416(B,71 ,24 )                                  |             | RS1/16S560J |  | R 5548(B,47 ,157 ) |             | RS1/16S221J |   |
| R 2417(B,69 ,13 )                                  |             | RS1/16S122J |  | R 5549(B,44 ,151 ) |             | RS1/16S221J |   |
| R 2418(B,69 ,24 )                                  |             | RS1/16S122J |  | R 5550(B,45 ,156 ) |             | RS1/16S221J |   |
| R 2423(B,39 ,9 )                                   |             | RS1/16S113J |  | R 5553(B,39 ,156 ) |             | RS1/16S221J |   |
| R 2424(B,39 ,27 )                                  |             | RS1/16S113J |  | R 5554(B,39 ,150 ) |             | RS1/16S221J |   |
| R 2425(B,42 ,10 )                                  |             | RS1/16S102J |  | R 5555(B,37 ,155 ) |             | RS1/16S221J |   |
| R 2426(B,42 ,26 )                                  |             | RS1/16S102J |  | R 5556(B,33 ,77 )  |             | RS1/16S221J |   |
| R 2431(B,54 ,10 )                                  |             | RS1/16S333J |  | R 5557(B,34 ,151 ) |             | RS1/16S221J |   |
| R 2432(B,54 ,26 )                                  |             | RS1/16S333J |  | R 5558(B,33 ,156 ) |             | RS1/16S221J |   |
| R 2451(B,92 ,15 )                                  |             | RS1/16S103J |  | R 5559(B,32 ,152 ) |             | RS1/16S221J | D |
| R 2452(B,92 ,18 )                                  |             | RS1/16S103J |  | R 5560(B,31 ,156 ) |             | RS1/16S221J |   |
| R 2453(B,125 ,44 )                                 |             | RS1/16S473J |  | R 5561(B,32 ,163 ) |             | RS1/16S822J |   |
| R 2801(B,20 ,49 )                                  |             | RS1/16S103J |  | R 5562(B,34 ,165 ) |             | RS1/16S221J |   |
| R 2802(B,20 ,40 )                                  |             | RS1/16S103J |  | R 5563(B,36 ,168 ) |             | RS1/16S221J |   |
| R 2803(A,34 ,53 ) CARBON FILM RESISTOR RD1/2VM4R7J |             |             |  | R 5567(B,47 ,189 ) |             | RS1/16S221J |   |
| R 2805(A,41 ,53 ) CARBON FILM RESISTOR RD1/2VM161J |             |             |  | R 5571(B,47 ,196 ) |             | RS1/16S101J |   |
| R 2809(B,67 ,57 )                                  |             | RS1/16S102J |  | R 5576(B,51 ,194 ) |             | RS1/16S471J |   |
| R 2810(B,64 ,49 )                                  |             | RS1/16S473J |  | R 5577(B,53 ,194 ) |             | RS1/16S221J |   |
| R 2811(B,62 ,57 )                                  |             | RS1/16S102J |  | R 5578(B,55 ,199 ) |             | RS1/16S221J |   |
| R 2813(B,31 ,19 )                                  |             | RS1/16S622J |  | R 5579(B,55 ,194 ) |             | RS1/16S221J | E |
| R 2814(B,31 ,28 )                                  |             | RS1/16S622J |  | R 5580(B,27 ,198 ) |             | RS1/16S102J |   |
| R 2815(B,18 ,12 )                                  |             | RS1/16S102J |  | R 5581(B,42 ,212 ) |             | RS1/16S102J |   |
| R 2816(B,21 ,14 )                                  |             | RS1/16S472J |  | R 5582(B,66 ,193 ) |             | RS1/16S105J |   |
| R 2898(B,14 ,40 )                                  |             | RS1/16S0R0J |  | R 5583(B,71 ,206 ) |             | RS1/16S103J |   |
| R 2899(B,35 ,18 )                                  |             | RS1/16S0R0J |  | R 5584(B,73 ,208 ) |             | RS1/16S103J |   |
| R 5431(B,101 ,160 )                                |             | RS1/16S105J |  | R 5585(B,65 ,211 ) |             | RS1/16S103J |   |
| R 5432(B,109 ,161 )                                |             | RS1/16S105J |  | R 5586(B,65 ,207 ) |             | RS1/16S103J |   |
| R 5434(B,111 ,161 )                                |             | RS1/16S223J |  | R 5588(B,65 ,146 ) |             | RS1/16S221J |   |
| R 5501(B,41 ,189 )                                 |             | RS1/16S222J |  | R 5590(B,37 ,150 ) |             | RS1/16S221J |   |
| R 5502(B,59 ,199 )                                 |             | RS1/16S471J |  | R 5592(B,62 ,155 ) |             | RS1/16S221J |   |
| R 5503(B,39 ,189 )                                 |             | RS1/16S473J |  | R 5593(B,66 ,189 ) |             | RS1/16S101J |   |
| R 5504(B,28 ,186 )                                 |             | RS1/16S101J |  | R 5594(B,77 ,194 ) |             | RS1/16S221J |   |
| R 5505(B,24 ,188 )                                 |             | RS1/16S103J |  | R 5595(B,57 ,194 ) |             | RS1/16S221J |   |
| R 5506(B,56 ,199 )                                 |             | RS1/16S221J |  | R 5597(B,69 ,146 ) |             | RS1/16S221J | F |

|   | 1                   | 2                  | 3                   | 4               |                    |                 |
|---|---------------------|--------------------|---------------------|-----------------|--------------------|-----------------|
|   | <u>Mark No.</u>     | <u>Description</u> | <u>Part No.</u>     | <u>Mark No.</u> | <u>Description</u> | <u>Part No.</u> |
| A | R 5598(B,71 ,146 )  | RS1/16S221J        | R 8210(B,138 ,198 ) | RS1/16S472J     |                    |                 |
|   | R 5601(B,62 ,149 )  | RS1/16S221J        | R 8211(B,142 ,198 ) | RS1/16S682J     |                    |                 |
|   | R 5603(B,69 ,151 )  | RS1/16S103J        | R 8212(B,132 ,220 ) | RS1/16S102J     |                    |                 |
|   | R 5604(B,71 ,151 )  | RS1/16S103J        | R 8213(B,134 ,220 ) | RS1/16S102J     |                    |                 |
|   | R 5605(B,52 ,199 )  | RS1/16S471J        | R 8214(B,136 ,220 ) | RS1/16S102J     |                    |                 |
| B | R 5607(B,124 ,75 )  | RS1/16S561J        | R 8215(B,160 ,197 ) | RS1/16S680J     |                    |                 |
|   | R 5608(B,126 ,71 )  | RS1/16S473J        | R 8216(A,152 ,206 ) | RD1/4PU102J     |                    |                 |
|   | R 5615(B,14 ,193 )  | RS1/16S153J        | R 8217(B,126 ,192 ) | RS1/16S153J     |                    |                 |
|   | R 5632(B,46 ,151 )  | RS1/16S221J        | R 8301(B,126 ,154 ) | RS1/16S102J     |                    |                 |
|   | R 5633(B,49 ,156 )  | RS1/16S221J        | R 8302(B,130 ,158 ) | RS1/16S102J     |                    |                 |
| C | R 5634(B,49 ,151 )  | RS1/16S221J        | R 8303(B,128 ,156 ) | RS1/16S102J     |                    |                 |
|   | R 5639(B,67 ,211 )  | RS1/16S104J        | R 8304(B,145 ,174 ) | RS1/16S272J     |                    |                 |
|   | R 5704(B,198 ,89 )  | RS1/16S221J        | R 8305(B,143 ,178 ) | RS1/16S182J     |                    |                 |
|   | R 5705(B,201 ,82 )  | RS1/16S100J        | R 8306(B,143 ,182 ) | RS1/16S182J     |                    |                 |
|   | R 5801(B,12 ,88 )   | RS1/16S473J        | R 8307(B,145 ,182 ) | RS1/16S272J     |                    |                 |
| D | R 5802(A,24 ,97 )   | RD1/4PU102J        | R 8308(B,123 ,174 ) | RS1/16S103J     |                    |                 |
|   | R 5803(B,37 ,80 )   | RS1/16S102J        | R 8403(B,216 ,165 ) | RS1/16S331J     |                    |                 |
|   | R 5804(B,34 ,134 )  | RS1/16S102J        | R 8404(B,214 ,157 ) | RS1/16S331J     |                    |                 |
|   | R 5805(B,24 ,101 )  | RS1/16S473J        | R 8511(B,216 ,181 ) | RS1/16S182J     |                    |                 |
|   | R 5806(B,12 ,84 )   | RS1/16S473J        | R 8512(B,212 ,181 ) | RS1/16S182J     |                    |                 |
| E | R 5807(A,16 ,97 )   | RD1/4PU102J        | R 8513(B,216 ,171 ) | RS1/16S472J     |                    |                 |
|   | R 5812(B,39 ,87 )   | RS1/16S472J        | R 8514(B,214 ,181 ) | RS1/16S472J     |                    |                 |
|   | R 5813(B,9 ,118 )   | RS1/16S473J        | R 8515(B,216 ,177 ) | RS1/16S224J     |                    |                 |
|   | R 5814(B,11 ,118 )  | RS1/16S473J        | R 8516(B,218 ,173 ) | RS1/16S224J     |                    |                 |
|   | R 5815(B,10 ,108 )  | RS1/16S473J        | R 8518(B,183 ,188 ) | RS1/16S473J     |                    |                 |
| F | R 5816(B,11 ,104 )  | RS1/16S473J        | R 8519(B,158 ,224 ) | RS1/16S0R0J     |                    |                 |
|   | R 5885(B,28 ,78 )   | RS1/16S221J        | R 8520(B,156 ,212 ) | RS1/16S0R0J     |                    |                 |
|   | R 5886(B,25 ,77 )   | RS1/16S221J        | R 8521(B,155 ,220 ) | RS1/16S682J     |                    |                 |
|   | R 5887(B,21 ,78 )   | RS1/16S221J        | R 8522(B,156 ,216 ) | RS1/16S682J     |                    |                 |
|   | R 5889(B,18 ,87 )   | RS1/16S221J        | R 8523(B,156 ,224 ) | RS1/16S222J     |                    |                 |
| G | R 5961(B,73 ,146 )  | RS1/16S473J        | R 8524(B,154 ,212 ) | RS1/16S222J     |                    |                 |
|   | R 5963(B,102 ,152 ) | RS1/16S184J        | R 8637(A,167 ,119 ) | RD1/4PU102J     |                    |                 |
|   | R 5964(B,104 ,152 ) | RS1/16S392J        | R 8801(B,108 ,205 ) | RS1/16S103J     |                    |                 |
|   | R 5965(B,116 ,151 ) | RS1/16S154J        | R 8802(B,106 ,201 ) | RS1/16S103J     |                    |                 |
|   | R 5966(B,112 ,155 ) | RS1/16S103J        | R 8805(B,110 ,209 ) | RS1/16S563J     |                    |                 |
| H | R 5967(B,72 ,200 )  | RS1/16S105J        | R 8821(B,216 ,187 ) | CHIP RESISTOR   | RS1/16S75R0F       |                 |
|   | R 8103(B,157 ,166 ) | RS1/16S473J        | R 8832(B,217 ,222 ) | CHIP RESISTOR   | RS1/16S75R0F       |                 |
|   | R 8104(B,156 ,177 ) | RS1/16S473J        | R 8842(B,215 ,217 ) | CHIP RESISTOR   | RS1/16S75R0F       |                 |
|   | R 8105(B,159 ,166 ) | RS1/16S473J        | R 8853(B,218 ,199 ) | CHIP RESISTOR   | RS1/16S75R0F       |                 |
|   | R 8106(B,157 ,183 ) | RS1/16S473J        | R 8863(B,223 ,215 ) | CHIP RESISTOR   | RS1/16S75R0F       |                 |
| I | R 8107(B,163 ,183 ) | RS1/16S220J        | R 8873(B,216 ,205 ) | CHIP RESISTOR   | RS1/16S75R0F       |                 |
|   | R 8108(B,153 ,167 ) | RS1/16S220J        | R 8901(A,198 ,230 ) | RD1/4PU102J     |                    |                 |
|   | R 8111(B,172 ,166 ) | RS1/16S152J        | R 8904(A,197 ,221 ) | RD1/4PU102J     |                    |                 |
|   | R 8112(B,171 ,182 ) | RS1/16S152J        | R 9005(B,35 ,26 )   | RS1/16S0R0J     |                    |                 |
|   | R 8113(B,174 ,166 ) | RS1/16S152J        | R 9008(B,113 ,45 )  | RS1/16S0R0J     |                    |                 |
| J | R 8114(B,173 ,182 ) | RS1/16S152J        | R 9009(B,55 ,81 )   | RS1/16S0R0J     |                    |                 |
|   | R 8115(B,168 ,166 ) | RS1/16S103J        | R 9010(B,55 ,85 )   | RS1/16S0R0J     |                    |                 |
|   | R 8116(B,171 ,172 ) | RS1/16S103J        | R 9011(B,57 ,81 )   | RS1/16S0R0J     |                    |                 |
|   | R 8117(B,170 ,166 ) | RS1/16S104J        | R 9012(B,59 ,85 )   | RS1/16S0R0J     |                    |                 |
|   | R 8124(B,163 ,166 ) | RS1/16S101J        |                     |                 |                    |                 |
| K | R 8125(B,161 ,183 ) | RS1/16S101J        | <b>CAPACITORS</b>   |                 |                    |                 |
|   | R 8201(B,124 ,198 ) | RS1/16S103J        | C 2201(A,117 ,34 )  | CEAT1R0M50      |                    |                 |
|   | R 8202(B,117 ,198 ) | RS1/16S103J        | C 2202(A,117 ,44 )  | CEAT1R0M50      |                    |                 |
|   | R 8203(B,119 ,193 ) | RS1/16S103J        | C 2203(A,157 ,32 )  | CEAT100M50      |                    |                 |
|   | R 8204(B,133 ,198 ) | RS1/16S562J        | C 2204(A,138 ,45 )  | CEAT100M50      |                    |                 |
| L | R 8205(B,142 ,193 ) | RS1/16S103J        | C 2205(B,139 ,30 )  | CCSRCH101J50    |                    |                 |
|   | R 8206(B,128 ,198 ) | RS1/16S103J        | C 2206(B,138 ,36 )  | CCSRCH101J50    |                    |                 |
|   | R 8207(B,132 ,193 ) | RS1/16S682J        | C 2211(B,171 ,12 )  | CKSRYB152K50    |                    |                 |
|   | R 8208(B,134 ,193 ) | RS1/16S153J        | C 2212(B,171 ,17 )  | CKSRYB152K50    |                    |                 |
|   | R 8209(B,136 ,193 ) | RS1/16S472J        | C 2213(B,134 ,9 )   | CCSRCH101J50    |                    |                 |

| 5                                |             | 6            |  | 7                                  |             | 8            |   |
|----------------------------------|-------------|--------------|--|------------------------------------|-------------|--------------|---|
| Mark No.                         | Description | Part No.     |  | Mark No.                           | Description | Part No.     |   |
| C 2214(B,129,18)                 |             | CCSRCH101J50 |  | C 2806(A,14,46)                    |             | CEJQ330M10   |   |
| C 2215(A,168,7)                  |             | CEAT101M16   |  | C 2807(A,64,52)                    |             | CEAT470M16   | A |
| C 2216(A,164,32)                 |             | CEAT221M16   |  | C 2808(A,32,13) PPS CAPACITOR      |             | COHA822J2A   |   |
| C 2217(A,115,12)                 |             | CEAT1R0M50   |  | C 2809(A,15,22) CERAMIC CAPACITOR  |             | CCCSL151K2H  |   |
| C 2218(A,116,21)                 |             | CEAT1R0M50   |  | C 2810(A,15,11)                    |             | CEJQ330M10   |   |
| C 2220(A,196,17)                 |             | CEAT100M50   |  | C 5433(A,113,165) ELECT. CAPACITOR |             | CEJQR22M50   |   |
| C 2221(A,197,25)                 |             | CEAT100M50   |  | C 5501(A,27,190)                   |             | ACH1246      |   |
| C 2222(A,131,28)                 |             | CEAT2R2M50   |  | C 5502(A,37,191)                   |             | CEAT101M16   |   |
| C 2223(A,125,28)                 |             | CEAT2R2M50   |  | C 5504(B,30,190)                   |             | CCSRCH101J50 |   |
| C 2224(A,131,7)                  |             | CEAT2R2M50   |  | C 5505(B,39,185)                   |             | CKSRYB103K50 |   |
| C 2225(A,121,18)                 |             | CEAT2R2M50   |  | C 5506(A,41,203)                   |             | CEAT1R0M50   |   |
| C 2226(B,196,43)                 |             | CKSRYB103K50 |  | C 5507(B,37,184)                   |             | CKSRYB104K16 |   |
| C 2227(B,152,36)                 |             | CKSRYB103K50 |  | C 5508(B,41,193)                   |             | CKSRYB103K50 |   |
| C 2228(A,151,40)                 |             | CEAT470M16   |  | C 5511(A,24,179)                   |             | CEAT100M50   | B |
| C 2231(B,167,16)                 |             | CKSRYB103K50 |  | C 5515(B,73,185)                   |             | CKSRYB104K16 |   |
| C 2251(A,180,29)                 |             | CEAT220M50   |  | C 5516(B,69,206)                   |             | CKSRYB103K50 |   |
| C 2252(B,176,39)                 |             | CKSRYB334K10 |  | C 5517(B,75,204)                   |             | CKSRYB103K50 |   |
| C 2253(B,187,42)                 |             | CCSRCH271J50 |  | C 5518(B,73,204)                   |             | CKSRYB103K50 |   |
| C 2254(A,200,43)                 |             | CEAT2R2M50   |  | C 5608(A,125,84)                   |             | CEAT220M25   |   |
| C 2255(A,187,39)                 |             | CEAT1R0M50   |  | C 5704(A,196,89)                   |             | CEAL100M16   |   |
| C 2256(B,189,30)                 |             | CCSRCH470J50 |  | C 5706(B,207,73)                   |             | CKSRYB102K50 |   |
| C 2257(B,190,39)                 |             | CCSRCH470J50 |  | C 5719(B,209,82)                   |             | CKSRYB104K16 |   |
| C 2261(A,208,37)                 |             | CEAT4R7M50   |  | C 5721(B,199,93)                   |             | CKSRYB103K50 |   |
| C 2262(A,213,29)                 |             | CEAT4R7M50   |  | C 5722(B,201,93)                   |             | CKSRYB102K50 |   |
| C 2301(B,42,35)                  |             | CCSRCH100D50 |  | C 5725(B,187,82)                   |             | CCSRCH101J50 | C |
| C 2302(B,42,46)                  |             | CCSRCH100D50 |  | C 5727(B,182,82)                   |             | CCSRCH101J50 |   |
| C 2303(B,64,37)                  |             | CCSRCH681J50 |  | C 5801(B,34,82)                    |             | CCSRCH221J50 |   |
| C 2304(B,67,41)                  |             | CCSRCH681J50 |  | C 5802(B,34,90)                    |             | CKSRYB104K16 |   |
| C 2307(A,71,35) FILM CAPACITOR   |             | CQMBA682J50  |  | C 5960(B,114,157)                  |             | CKSRYB104K16 |   |
| C 2308(A,70,51) FILM CAPACITOR   |             | CQMBA682J50  |  | C 5961(B,100,152)                  |             | CKSRYB224K16 |   |
| C 2309(A,85,40) ELECT. CAPACITOR |             | CEAT330M50   |  | C 5962(B,74,200)                   |             | CKSRYB103K50 |   |
| C 2310(A,85,46) ELECT. CAPACITOR |             | CEAT330M50   |  | C 5963(A,99,230) ELECT. CAPACITOR  |             | XCH3021      |   |
| C 2311(A,95,36)                  |             | CEAT100M50   |  | C 5964(B,97,227)                   |             | CKSRYB104K16 |   |
| C 2312(A,95,46)                  |             | CEAT100M50   |  | C 5965(B,93,223)                   |             | CKSRYB104K16 |   |
| C 2314(A,74,45)                  |             | CEAT470M16   |  | C 5966(A,90,227)                   |             | CEAT470M16   |   |
| C 2315(B,67,37)                  |             | CKSRYB102K50 |  | C 5967(B,95,223)                   |             | CKSRYB104K16 | D |
| C 2401(B,52,18)                  |             | CCSRCH470J50 |  | C 5968(A,98,222)                   |             | CEAT470M16   |   |
| C 2402(B,62,9)                   |             | CCSRCH470J50 |  | C 8101(B,186,225)                  |             | CKSRYB103K50 |   |
| C 2403(A,78,8)                   |             | CEAT1R0M50   |  | C 8103(B,188,228)                  |             | CKSRYB103K50 |   |
| C 2404(A,78,28)                  |             | CEAT1R0M50   |  | C 8107(B,165,177)                  |             | CKSRYB103K50 |   |
| C 2405(A,51,7) FILM CAPACITOR    |             | CQMBA683J50  |  | C 8108(B,153,171)                  |             | CKSRYB103K50 |   |
| C 2406(A,51,29) FILM CAPACITOR   |             | CQMBA683J50  |  | C 8115(A,160,162)                  |             | CEAT100M50   |   |
| C 2407(A,62,12) ELECT. CAPACITOR |             | CEAT330M50   |  | C 8116(A,153,181)                  |             | CEAT100M50   |   |
| C 2408(A,62,24) ELECT. CAPACITOR |             | CEAT330M50   |  | C 8121(A,179,167)                  |             | CEAT100M50   |   |
| C 2409(A,73,17)                  |             | CQMA223J50   |  | C 8122(A,185,176)                  |             | CEAT100M50   |   |
| C 2410(A,68,20)                  |             | CQMA223J50   |  | C 8201(A,120,169)                  |             | CEAT470M16   |   |
| C 2419(A,51,12)                  |             | CEJQ1R0M50   |  | C 8202(B,123,167)                  |             | CKSRYB473K25 | E |
| C 2420(A,51,23)                  |             | CEJQ1R0M50   |  | C 8203(B,122,198)                  |             | CKSRYB103K50 |   |
| C 2421(A,36,7)                   |             | CQMA152J50   |  | C 8204(B,120,198)                  |             | CKSRYB103K50 |   |
| C 2422(A,36,29)                  |             | CQMA152J50   |  | C 8205(B,130,193)                  |             | CKSRYB103K50 |   |
| C 2423(B,39,16)                  |             | CCSRCH221J50 |  | C 8206(B,128,193)                  |             | CKSRYB822K50 |   |
| C 2424(B,39,20)                  |             | CCSRCH221J50 |  | C 8207(B,124,220)                  |             | CKSRYB683K25 |   |
| C 2425(A,62,15)                  |             | CEAT470M16   |  | C 8208(B,126,220)                  |             | CKSRYB683K25 |   |
| C 2431(B,58,9)                   |             | CKSRYB122K50 |  | C 8209(B,128,220)                  |             | CKSRYB683K25 |   |
| C 2432(B,56,26)                  |             | CKSRYB122K50 |  | C 8212(B,138,220)                  |             | CCSRCH101J50 |   |
| C 2801(A,19,42)                  |             | CQMA123J50   |  | C 8213(A,121,220)                  |             | CEAT470M16   |   |
| C 2802(A,23,51)                  |             | CQMA682J50   |  | C 8214(B,148,201)                  |             | CKSRYB224K16 | F |
| C 2803(A,19,46)                  |             | CQMA472J50   |  | C 8215(B,130,198)                  |             | CKSRYB224K16 |   |
| C 2804(A,23,37)                  |             | CQMA472J50   |  | C 8216(B,126,198)                  |             | CKSRYB472K50 |   |
| C 2805(A,14,37)                  |             | CEJQ330M10   |  | C 8217(B,140,193)                  |             | CKSRYB471K50 |   |

**Mark No. Description****Part No.****Mark No. Description****Part No.**

C 8218(B,138 ,193 )

CKSRYB103K50

R 5304(A,259 ,204 )

RS1/16S182J

C 8219(B,136 ,198 )

CKSRYB122K50

R 5304(A,250 ,159 )

RS1/16S182J

C 8220(B,140 ,198 )

CKSRYB102K50

R 5304(A,248 ,141 )

RS1/16S182J

C 8221(A,156 ,197 )

CEAT100M50

R 5304(A,312 ,121 )

RS1/16S182J

C 8222(A,165 ,199 )

CEAT470M16

R 5304(A,303 ,149 )

RS1/16S182J

C 8223(B,150 ,204 )

CKSRYB473K25

R 5304(A,309 ,132 )

RS1/16S182J

C 8301(B,122 ,158 )

CKSRYB104K16

R 5304(A,291 ,121 )

RS1/16S182J

C 8302(B,124 ,158 )

CKSRYB104K16

R 5304(A,324 ,25 )

RS1/16S182J

C 8303(B,126 ,158 )

CKSRYB104K16

R 5304(A,318 ,37 )

RS1/16S182J

C 8304(B,134 ,158 )

CKSRYB224K16

R 5304(A,318 ,67 )

RS1/16S182J

C 8305(A,138 ,158 )

CEAT2R2M50

R 5304(A,318 ,98 )

RS1/16S182J

C 8306(B,139 ,162 )

CKSRYB473K25

R 5304(A,261 ,121 )

RS1/16S182J

C 8307(A,139 ,171 )

CEAT470M16

R 5304(A,318 ,123 )

RS1/16S182J

C 8308(A,138 ,175 )

CEAT2R2M50

R 5304(A,318 ,196 )

RS1/16S182J

C 8309(A,132 ,174 )

CEAT2R2M50

R 5304(A,303 ,6 )

RS1/16S182J

C 8310(A,126 ,174 )

CEAT2R2M50

R 5304(A,248 ,6 )

RS1/16S182J

C 8312(A,118 ,172 )

CEAT4R7M50

R 5304(A,256 ,149 )

RS1/16S182J

C 8313(B,115 ,175 )

CKSRYB103K50

R 5304(A,261 ,132 )

RS1/16S182J

C 8401(B,220 ,165 )

CCSRCH221J50

R 5304(A,312 ,204 )

RS1/16S182J

C 8402(B,222 ,161 )

CCSRCH221J50

R 5304(A,318 ,156 )

RS1/16S182J

C 8509(A,207 ,170 )

CEAT100M50

R 5304(A,325 ,241 )

RS1/16S182J

C 8510(A,208 ,182 )

CEAT100M50

R 5304(A,240 ,67 )

RS1/16S182J

C 8516(B,220 ,174 )

CKSRYB471K50

R 5304(B,284 ,162 )

RS1/16S182J

C 8517(B,220 ,178 )

CKSRYB471K50

C 8521(B,153 ,220 )

CKSRYB681K50

C 8522(B,154 ,216 )

CKSRYB681K50

C 8771(A,147 ,87 )

CEAT470M16

C 8822(B,220 ,183 )

CCSRCH470J50

C 8828(B,102 ,211 )

CKSRYB103K50

C 8830(B,110 ,216 )

CKSRYB103K50

C 8833(A,113 ,209 )

CEAT100M50

C 8834(A,106 ,185 )

CEAT100M50

C 8837(A,217 ,234 ) ELECT. CAPACITOR

CEAT102M6R3

C 8851(A,211 ,196 ) ELECT. CAPACITOR

CEAT102M6R3

C 8852(B,218 ,195 )

CCSRCH470J50

C 8861(A,210 ,223 ) ELECT. CAPACITOR

CEAT471M6R3

C 8862(B,218 ,210 )

CCSRCH470J50

C 8871(A,210 ,213 ) ELECT. CAPACITOR

CEAT471M6R3

C 8872(B,222 ,205 )

CCSRCH470J50

C 8881(A,214 ,191 ) ELECT. CAPACITOR

CEAT102M6R3

C 8907(A,191 ,234 )

CEAT470M16

C 8908(A,191 ,227 )

CEAT470M16

**F LED ASSY  
MISCELLANEOUS**

Q 5219(B,309 ,147 ) TRANSISTOR(SC-59)

2SC3052

Q 5220(B,285 ,146 ) TRANSISTOR(SC-59)

2SC3052

D 5207(A,301 ,142 ) LED(WHITE)

NSPWF50BS-9706

D 5209(A,284 ,142 ) LED(WHITE)

NSPWF50BS-9706

D 5211(A,268 ,142 ) LED(WHITE)

NSPWF50BS-9706

D 5212(A,276 ,142 ) LED(BLUE)

NSPBF50S-3026

D 5213(A,293 ,142 ) LED(BLUE)

NSPBF50S-3026

D 5219(B,309 ,143 ) DIODE

UDZS6R8(B)

D 5221(B,281 ,138 ) DIODE

UDZS6R8(B)

D 5223(B,273 ,138 ) DIODE

UDZS6R8(B)

D 5224(B,278 ,138 ) DIODE

UDZS6R8(B)

D 5225(B,286 ,136 ) DIODE

UDZS6R8(B)

J 1 (A,274 ,115 ) JUMPER WIRE

D20PYY0410E

LED COVER(PLS)

XMR3099

10 4P CABLE HOLDER

51048-0400

**RESISTORS**

R 5219(B,315 ,147 )

RS1/16S270J

R 5220(B,287 ,142 )

RS1/16S270J

R 5223(A,274 ,146 )

RD1/4PU151J

R 5225(B,264 ,136 )

RS1/10S181J

R 5226(B,266 ,136 )

RS1/10S181J

R 5227(B,269 ,136 )

RS1/10S181J

R 5228(B,290 ,136 )

RS1/10S391J

R 5229(B,293 ,136 )

RS1/10S391J

R 5230(B,298 ,136 )

RS1/10S391J

**G DISPLAY ASSY  
MISCELLANEOUS**

Q 5101(B,299 ,24 ) DIGITAL TR(SC-70)

RT1N431M

Q 5102(B,299 ,29 ) DIGITAL TR(SC-70)

RT1N431M

Q 5110(B,263 ,20 ) DIGITAL TR(SC-70)

RT1N431M

Q 5204(B,280 ,109 ) TRANSISTOR(SC-59)

2SC3052

**E KEY ASSY  
MISCELLANEOUS**

J 2 (A,240 ,127 ) JUMPER WIRE

D20PYY0225E

S 5301(A,305 ,175 ) SWITCH

VSG1009

S 5302(A,284 ,171 ) SWITCH

VSG1009

S 5303(A,263 ,175 ) SWITCH

VSG1009

S 5304(A,294 ,171 ) SWITCH

VSG1009

S 5305(A,274 ,171 ) SWITCH

VSG1009

9 2P CABLE HOLDER

51048-0200

**RESISTORS**

R 5301(B,297 ,162 )

RS1/16S102J

R 5302(B,293 ,162 )

RS1/16S122J

R 5303(B,289 ,162 )

RS1/16S152J

R 5304(A,325 ,5 )

RS1/16S182J

R 5304(A,283 ,204 )

RS1/16S182J

| 5                        |                | 6                |  | 7                                                                                  |                   | 8            |   |
|--------------------------|----------------|------------------|--|------------------------------------------------------------------------------------|-------------------|--------------|---|
| Mark No.                 | Description    | Part No.         |  | Mark No.                                                                           | Description       | Part No.     |   |
| D 5101(A,311 ,9 )        | LED(BLUE)      | SLR-343BBT(FGHJ) |  | C 5103(A,290 ,44 )                                                                 |                   | CEAL470M16   |   |
| D 5102(A,311 ,45 )       | LED(ORANGE)    | SLI-343DCW(STU)  |  | C 5104(B,296 ,56 )                                                                 |                   | CKSRYB104K16 |   |
| D 5110(A,264 ,12 )       | LED(GREEN)     | SLR-343MC(NPQ)   |  | C 5105(B,309 ,68 )                                                                 |                   | CCSRCH100D50 | A |
| D 5215(B,275 ,98 )       | DIODE          | MA111            |  | C 5106(B,307 ,68 )                                                                 |                   | CCSRCH220J50 |   |
| D 5216(B,275 ,93 )       | DIODE          | MA111            |  | C 5202(B,240 ,109 )                                                                |                   | CKSRYB103K50 |   |
| L 5101(A,303 ,57 )       | AXIAL INDUCTOR | LAU220J          |  | C 5204(A,266 ,114 )                                                                |                   | CEAL101M10   |   |
| S 5101(A,319 ,24 )       | SWITCH         | VSG1009          |  |  |                   |              |   |
| S 5102(A,314 ,52 )       | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5103(A,314 ,62 )       | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5104(A,314 ,72 )       | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5105(A,314 ,82 )       | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5106(A,314 ,93 )       | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5107(A,314 ,103 )      | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5108(A,314 ,113 )      | SWITCH         | VSG1009          |  |                                                                                    |                   |              | B |
| S 5201(A,241 ,27 )       | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5202(A,260 ,38 )       | SWITCH         | VSG1009          |  |                                                                                    |                   |              |   |
| S 5203(A,245 ,49 )       | SWITCH         | VSG1009          |  | L 3902(B,320 ,11 )                                                                 | INDUCTOR          | CTF1399      |   |
| S 5204(A,260 ,60 )       | SWITCH         | VSG1009          |  | L 5401(A,314 ,118 )                                                                | FERRI INDUCTOR    | LAU100J      |   |
| S 5205(A,245 ,71 )       | SWITCH         | VSG1009          |  | J 3902(A,314 ,13 )                                                                 | JUMPER WIRE       | D20PY0430E   |   |
| S 5206(A,260 ,110 )      | SWITCH         | VSG1009          |  | J 5401(A,307 ,107 )                                                                | JUMPER WIRE       | D20PY0520E   |   |
| S 5207(A,241 ,98 )       | SWITCH         | VSG1009          |  | JA5401(A,319 ,70 )                                                                 | MIC JACK          | XKN3012      |   |
| CN5101(A,276 ,24 )       | 13P CONNECTOR  | 52044-1345       |  | JA5402(A,319 ,50 )                                                                 | MIC JACK          | XKN3012      |   |
| CN5104(A,300 ,61 )       | CONNECTOR 10P  | 52492-1020       |  | JA5403(A,319 ,30 )                                                                 | MINITURE JACK     | AKN7005      |   |
| 5201REMOTE RECEIVER UNIT |                | GP1UM28XK0VF     |  | VR5401(A,319 ,90 )                                                                 | VARIABLE( 10K-X1) | XCS3007      |   |
| 6 4P CABLE HOLDER        |                | 51048-0400       |  | 4P CABLE HOLDER                                                                    |                   | 51048-0400   |   |
| 5 2P CABLE HOLDER        |                | 51048-0200       |  | 5P CABLE HOLDER                                                                    |                   | 51048-0500   | C |
| <b>RESISTORS</b>         |                |                  |  | <b>RESISTORS</b>                                                                   |                   |              |   |
| R 5101(B,314 ,22 )       |                | RS1/16S102J      |  | R 3903(B,307 ,7 )                                                                  |                   | RS1/16S680J  |   |
| R 5102(B,310 ,53 )       |                | RS1/16S122J      |  | R 3904(B,316 ,7 )                                                                  |                   | RS1/16S680J  |   |
| R 5103(B,310 ,57 )       |                | RS1/16S152J      |  | R 3907(B,309 ,7 )                                                                  |                   | RS1/16S680J  |   |
| R 5104(B,309 ,80 )       |                | RS1/16S182J      |  | R 3908(B,318 ,7 )                                                                  |                   | RS1/16S680J  |   |
| R 5105(B,309 ,84 )       |                | RS1/16S272J      |  | R 3909(B,313 ,17 )                                                                 |                   | RS1/16S680J  |   |
| R 5106(B,309 ,94 )       |                | RS1/16S332J      |  | R 5401(A,317 ,114 )                                                                |                   | RD1/4PU681J  |   |
| R 5107(B,309 ,104 )      |                | RS1/16S562J      |  | R 5402(B,299 ,71 )                                                                 |                   | RS1/16S393J  |   |
| R 5108(B,310 ,74 )       |                | RS1/16S221J      |  | R 5403(B,312 ,75 )                                                                 |                   | RS1/16S103J  |   |
| R 5109(B,308 ,74 )       |                | RS1/16S221J      |  | R 5404(B,310 ,73 )                                                                 |                   | RS1/16S822J  |   |
| R 5110(B,260 ,20 )       |                | RS1/16S331J      |  | R 5405(B,305 ,67 )                                                                 |                   | RS1/16S203J  | D |
| R 5111(B,258 ,20 )       |                | RS1/16S331J      |  | R 5406(B,310 ,77 )                                                                 |                   | RS1/16S203J  |   |
| R 5112(B,311 ,13 )       |                | RS1/16S272J      |  | R 5407(B,311 ,89 )                                                                 |                   | RS1/16S153J  |   |
| R 5113(B,309 ,13 )       |                | RS1/16S272J      |  | R 5408(B,307 ,89 )                                                                 |                   | RS1/16S472J  |   |
| R 5114(B,307 ,13 )       |                | RS1/16S272J      |  | R 5409(B,305 ,89 )                                                                 |                   | RS1/16S103J  |   |
| R 5115(B,305 ,13 )       |                | RS1/16S272J      |  | R 5414(B,305 ,49 )                                                                 |                   | RS1/16S123J  |   |
| R 5116(B,309 ,30 )       |                | RS1/16S272J      |  | R 5415(B,303 ,53 )                                                                 |                   | RS1/16S222J  |   |
| R 5117(B,311 ,30 )       |                | RS1/16S272J      |  | R 5416(B,303 ,28 )                                                                 |                   | RS1/16S332J  |   |
| R 5118(B,313 ,30 )       |                | RS1/16S272J      |  | R 5417(B,303 ,17 )                                                                 |                   | RS1/16S332J  |   |
| R 5119(B,307 ,30 )       |                | RS1/16S272J      |  | R 5418(B,301 ,28 )                                                                 |                   | RS1/16S473J  |   |
| R 5121(B,303 ,13 )       |                | RS1/16S272J      |  | R 5420(B,305 ,32 )                                                                 |                   | RS1/16S104J  |   |
| R 5201(B,251 ,35 )       |                | RS1/16S102J      |  | R 5421(B,299 ,32 )                                                                 |                   | RS1/16S103J  | E |
| R 5202(B,251 ,39 )       |                | RS1/16S122J      |  | R 5423(B,322 ,44 )                                                                 |                   | RS1/16S332J  |   |
| R 5203(B,251 ,50 )       |                | RS1/16S152J      |  | R 5425(B,319 ,48 )                                                                 |                   | RS1/16S332J  |   |
| R 5204(B,251 ,61 )       |                | RS1/16S182J      |  | R 5430(B,309 ,102 )                                                                |                   | RS1/16S223J  |   |
| R 5205(B,251 ,73 )       |                | RS1/16S272J      |  | <b>CAPACITORS</b>                                                                  |                   |              |   |
| R 5206(B,251 ,97 )       |                | RS1/16S332J      |  |                                                                                    |                   |              |   |
| R 5208(B,237 ,108 )      |                | RS1/16S102J      |  |                                                                                    |                   |              |   |
| R 5209(B,244 ,110 )      |                | RS1/16S470J      |  |                                                                                    |                   |              |   |
| R 5216(B,276 ,102 )      |                | RS1/16S101J      |  |                                                                                    |                   |              |   |
| R 5217(B,274 ,105 )      |                | RS1/16S122J      |  |                                                                                    |                   |              |   |
| <b>CAPACITORS</b>        |                |                  |  |                                                                                    |                   |              |   |
| C 5101(B,298 ,52 )       |                | CKSRYB102K50     |  | C 3903(B,311 ,7 )                                                                  |                   | CKSRYB473K25 |   |
|                          |                |                  |  | C 3904(B,314 ,7 )                                                                  |                   | CKSRYB473K25 |   |
|                          |                |                  |  | C 3905(B,315 ,17 )                                                                 |                   | CKSRYB103K50 |   |
|                          |                |                  |  | C 5401(A,303 ,117 )                                                                |                   | CEJQ101M16   |   |
|                          |                |                  |  | C 5402(B,304 ,71 )                                                                 |                   | CKSRYB104K25 |   |
|                          |                |                  |  | C 5403(B,301 ,71 )                                                                 |                   | CCSRCH101J50 | F |
|                          |                |                  |  | C 5404(B,306 ,71 )                                                                 |                   | CKSRYB103K50 |   |
|                          |                |                  |  | C 5405(B,308 ,67 )                                                                 |                   | CKSRYB123K50 |   |
|                          |                |                  |  | C 5406(B,308 ,71 )                                                                 |                   | CKSRYB472K50 |   |

**Mark No. Description****Part No.****Mark No. Description****Part No.**

C 5407(B,306,100)

CKSRYB103K50

C 5408(B,309,89)

CKSRYB332K50

C 5409(A,302,97)

CEAL220M16

C 5410(A,307,97)

CEJQ2R47M50

C 5411(B,303,89)

CKSRYB103K50

C 5412(B,306,45)

CKSRYB104K25

C 5414(B,303,49)

CKSRYB122K50

C 5416(A,314,61)

CEAL2R2M50

C 5419(B,305,17)

CCSRCH101J50

C 5420(A,300,13)

CEJQ470M16

C 5421(A,306,22)

CEJQ2R2M50

C 5422(A,307,34)

CEJQ2R2M50

C 5423(B,303,32)

CCSRCH331J50

C 5426(A,307,39)

CEJQ2R2M50

C 5427(B,317,49)

CCSRCH101J50

C 5428(B,317,68)

CCSRCH101J50

C 5429(B,324,62)

CKSRYB104K25

C 5430(B,320,92)

CKSRYB103K50

C 5431(A,309,45)

CEJQ2R2M50

C 5432(A,311,85)

CEJQ2R2M50

C 5436(B,301,17)

CKSRYB104K25

D 105 (B,157,113) DIODE

UDZS7R5(B)

D 106 (B,95,91) DIODE

UDZS7R5(B)

D 3385(A,172,90) DIODE

MTZJ36(B)

D 3386(A,175,95) DIODE

MTZJ36(B)

D 3387(A,169,95) DIODE

1SS133

D 3388(A,178,90) DIODE

1SS133

D 3389(A,147,112) DIODE

MTZJ10(B)

D 3390(A,168,112) DIODE

MTZJ10(B)

⚠ D 3391(A,120,86) DIODE

30PDA20-FC6

⚠ D 3392(A,156,85) DIODE

30PDA20-FC6

D 3393(A,144,107) DIODE

MTZJ18(B)

D 3394(A,160,112) DIODE

MTZJ18(B)

⚠ D 3401(B,24,107) DIODE

MA111

⚠ D 3421(A,70,93) DIODE

1SR139-400

⚠ D 3422(A,72,84) DIODE

1SR139-400

⚠ D 3423(A,75,96) DIODE

1SR139-400

⚠ D 3424(A,77,81) DIODE

1SR139-400

⚠ D 3425(A,70,99) DIODE

1SR139-400

⚠ D 3426(A,72,78) DIODE

1SR139-400

D 3427(A,55,80) DIODE

1SR139-400

D 3428(A,61,72) DIODE

1SR139-400

⚠ D 3481(B,46,88) DIODE

DAN217

⚠ D 3482(B,47,83) DIODE

DAN217

D 3601(A,110,118) DIODE

S5688G

D 3602(A,119,118) DIODE

S5688G

D 3603(A,127,118) DIODE

S5688G

D 3604(A,155,118) DIODE

S5688G

D 3651(A,96,41) DIODE

1SS133

D 3655(A,107,61) DIODE

1SS133

D 3657(B,99,57) DIODE

MA111

D 3658(B,110,70) DIODE

UDZS3R9(B)

⚠ TH111 (B,92,43) THERMISTOR

NCP18WF104J03RB

CN3001(A,172,14) 23P PLUG

XKP3071

CN3002(A,132,14) 23P PLUG

XKP3071

CN3651(A,181,26) PLUG(2P)

KM200SA2

**RESISTORS**

R 45 (B,86,44)

RS1/16S471J

R 46 (B,83,42)

RS1/16S103J

R 47 (B,66,42)

RS1/16S4701F

R 48 (B,69,31)

RS1/16S4701F

R 85 (A,94,115) METAL OXIDE RESISTOR

RS3LMF221J

R 91 (B,68,47)

RS1/16S104J

R 92 (B,70,36)

RS1/16S101J

R 93 (B,65,35)

RS1/16S221J

R 94 (B,92,27)

RS1/16S2701F

R 95 (B,84,27)

RS1/16S2701F

R 96 (B,76,29)

RS1/16S1002F

R 97 (B,74,30)

RS1/16S1002F

R 101 (B,112,101)

RS1/16S102J

R 102 (B,138,112)

RS1/16S103J

R 103 (B,138,108)

RS1/16S103J

R 104 (B,94,97)

RS1/16S102J

R 105 (B,102,93)

RS1/16S103J

R 106 (B,104,93)

RS1/16S103J

R 108 (B,101,30)

RS1/16S273J

R 109 (B,114,107)

RS1/16S821J

R 111 (B,90,46)

RS1/16S102J

R 112 (B,88,46)

RS1/16S102J

**AMP ASSY****MISCELLANEOUS**

⚠ IC 61 (A,110,107) REGULATOR IC

TA7812S

⚠ IC 71 (A,126,107) REGULATOR IC

TA79012S

⚠ IC 81 (A,86,39) IC

TA7805S

IC 3304(B,34,84) OP-AMP IC

HA17558AF

IC 3305(B,38,47) OP-AMP IC

HA17558AF

⚠ IC 3401(A,75,110) AUDIO IC

STK433-270

Q 43 (B,80,43) TRANSISTOR

2SA1576A

⚠ Q 91 (A,70,39) MOS FET

2SJ304

Q 92 (B,67,36) TRANSISTOR

2SC4081

Q 101 (B,109,101) CHIP TR (PNP X 2)

UMB1N

Q 102 (B,115,101) TRANSISTOR

UMH1N

Q 103 (B,97,95) CHIP TR (PNP X 2)

UMB1N

Q 104 (B,88,94) TRANSISTOR

UMH1N

Q 111 (B,83,47) TRANSISTOR

2SC4081

Q 3301(B,54,23) DUAL CHIP TRANSISTOR

XP4506

Q 3381(B,170,99) TRANSISTOR

2SC4081

Q 3382(B,178,99) TRANSISTOR

2SA1576A

⚠ Q 3383(A,152,107) MOS FET

2SJ304

⚠ Q 3384(A,168,107) MOS FET

2SK2232

Q 3485(B,19,102) TRANSISTOR

2SC4081

Q 3651(B,107,67) CHIP TRANSISTOR

RN1901

Q 3652(B,94,58) TRANSISTOR

DTA124TK

Q 3653(B,103,61) CHIP DIGITAL TRANS.

DTA124EUA

Q 3654(A,115,64) TRANSISTOR

2SD2144S

Q 3655(A,54,59) N-FET

2SK246

Q 3656(A,50,59) N-FET

2SK246

Q 3660(B,51,44) CHIP DIGITAL TRANS.

DTA124EUA

D 42 (B,94,46) DIODE

MA111

⚠ D 63 (A,97,106) DIODE

MTZJ18(B)

⚠ D 72 (A,129,106) DIODE

MTZJ18(B)

⚠ D 82 (A,92,36) DIODE

MTZJ7R5(B)

D 91 (B,66,47) CHIP ZENER DIODE

UDZS18B

⚠ D 98 (A,78,33) DIODE

MTZJ11(B)

D 101 (B,141,110) DIODE

MA111

D 102 (B,106,94) DIODE

MA111

| 5        |                                | 6            |  | 7                    |                               | 8            |   |
|----------|--------------------------------|--------------|--|----------------------|-------------------------------|--------------|---|
| Mark No. | Description                    | Part No.     |  | Mark No.             | Description                   | Part No.     |   |
| R 113    | (B,92,46)                      | RS1/16S221J  |  | R 3675               | (B,36,54)                     | RS1/16S104J  |   |
| R 114    | (B,103,44)                     | RS1/16S0R0J  |  | R 3677               | (B,42,47)                     | RS1/16S104J  |   |
| R 3301   | (B,54,40)                      | RS1/16S471J  |  | R 3678               | (B,49,43)                     | RS1/16S683J  |   |
| R 3302   | (B,48,32)                      | RS1/16S471J  |  | R 3679               | (B,37,40)                     | RS1/16S683J  | A |
| R 3303   | (B,54,17)                      | RS1/16S222J  |  | R 3680               | (B,34,54)                     | RS1/16S471J  |   |
| R 3304   | (B,54,29)                      | RS1/16S222J  |  | R 3681               | (B,52,49)                     | RS1/16S393J  |   |
| R 3313   | (B,63,25)                      | RS1/16S223J  |  | R 3682               | (B,45,55)                     | RS1/16S684J  |   |
| R 3314   | (B,48,28)                      | RS1/16S223J  |  | R 3683               | (B,41,56)                     | RS1/16S105J  |   |
| R 3371   | (B,61,25)                      | RS1/16S0R0J  |  | R 3687               | (B,76,33)                     | RS1/16S273J  |   |
| R 3381   | (B,172,87)                     | RS1/16S103J  |  | <b>CAPACITORS</b>    |                               |              |   |
| R 3382   | (B,175,87)                     | RS1/16S103J  |  | C 63                 | (A,97,110) ELECT. CAPACITOR   | CEJQ220M35   |   |
| R 3383   | (B,172,102)                    | RS1/16S104J  |  | C 66                 | (B,111,113)                   | CKSRYB473K50 |   |
| R 3384   | (B,175,102)                    | RS1/16S104J  |  | C 71                 | (B,126,103)                   | CKSRYB473K50 |   |
| R 3385   | (B,172,98)                     | RS1/16S153J  |  | C 72                 | (A,134,108)                   | CEAT100M50   | B |
| R 3386   | (B,175,98)                     | RS1/16S153J  |  | C 81                 | (B,83,38)                     | CKSRYB473K50 |   |
| R 3387   | (A,155,112)                    | RD1/4PU101J  |  | C 82                 | (A,90,30) ELECT. CAPACITOR    | CEAT470M25   |   |
| R 3388   | (A,171,112)                    | RD1/4PU101J  |  | C 92                 | (B,67,31)                     | CKSRYB104K16 |   |
| R 3389   | (B,157,108)                    | RS1/16S104J  |  | C 97                 | (B,80,33)                     | CCSRCH221J50 |   |
| R 3390   | (B,173,108)                    | RS1/16S104J  |  | C 98                 | (A,71,32) ELECT. CAPACITOR    | CEAL470M25   |   |
| R 3405   | (B,52,91)                      | RS1/16S563J  |  | C 101                | (A,109,96)                    | CEAT1R0M50   |   |
| R 3406   | (B,39,93)                      | RS1/16S563J  |  | C 102                | (A,91,94)                     | CEAT1R0M50   |   |
| R 3407   | (B,52,95)                      | RS1/16S221J  |  | C 3301               | (A,58,28)                     | CEAL2R2M50   |   |
| R 3408   | (B,43,100)                     | RS1/16S221J  |  | C 3302               | (A,51,28)                     | CEAL2R2M50   |   |
| R 3409   | (B,48,92)                      | RS1/16S152J  |  | C 3312               | (A,19,111) ELECT. CAPACITOR   | CEAT470M25   | C |
| R 3410   | (B,46,100)                     | RS1/16S152J  |  | C 3317               | (A,58,21) ELECT. CAPACITOR    | CEAL100M50   |   |
| R 3411   | (B,53,106)                     | RS1/16S563J  |  | C 3318               | (A,51,21) ELECT. CAPACITOR    | CEAL100M50   |   |
| R 3412   | (B,51,114)                     | RS1/16S563J  |  | C 3403               | (B,50,91)                     | CKSRYB102K50 |   |
| R 3417   | (A,66,98) METAL OXIDE RESISTOR | ACN7123      |  | C 3404               | (B,46,105)                    | CKSRYB102K50 |   |
| R 3418   | (A,59,96) METAL OXIDE RESISTOR | ACN7123      |  | C 3405               | (B,50,95)                     | CCSRCH470J50 |   |
| ⚠ R 3423 | (B,55,99)                      | RS1/16S1R0J  |  | C 3406               | (B,48,105)                    | CCSRCH470J50 |   |
| ⚠ R 3424 | (B,75,106)                     | RS1/16S1R0J  |  | C 3407               | (A,53,88)                     | CEAL100M16   |   |
| ⚠ R 3427 | (A,58,77) CARBON FILM RESISTOR | RD1/4MUF470J |  | C 3408               | (A,41,96)                     | CEAL100M16   |   |
| ⚠ R 3428 | (A,68,58) CARBON FILM RESISTOR | RD1/4MUF470J |  | C 3409               | (B,51,106)                    | CCSRCH8R0D50 |   |
| ⚠ R 3451 | (B,77,106)                     | RS1/16S1R0J  |  | C 3410               | (B,53,114)                    | CCSRCH8R0D50 |   |
| R 3491   | (B,48,96)                      | RS1/16S0R0J  |  | C 3421               | (A,66,74) ELECT. CAPACITOR    | CEATR22M2A   | D |
| R 3492   | (B,49,85)                      | RS1/16S0R0J  |  | C 3422               | (A,73,74) ELECT. CAPACITOR    | CEATR22M2A   |   |
| R 3493   | (B,18,107)                     | RS1/16S222J  |  | C 3423               | (A,33,76)                     | CEAT221M50   |   |
| R 3494   | (B,22,107)                     | RS1/16S102J  |  | C 3424               | (A,48,71)                     | CEAT221M50   |   |
| R 3495   | (B,20,107)                     | RS1/16S333J  |  | C 3507               | (A,35,96)                     | CEAL470M6R3  |   |
| R 3496   | (B,21,102)                     | RS1/16S562J  |  | C 3509               | (B,41,114)                    | CCSRCH8R0D50 |   |
| R 3505   | (B,29,93)                      | RS1/16S563J  |  | C 3651               | (A,97,68)                     | CEAT101M25   |   |
| R 3507   | (B,39,102)                     | RS1/16S221J  |  | C 3652               | (A,98,60) ELECT. CAPACITOR    | CEAT470M25   |   |
| R 3509   | (B,37,102)                     | RS1/16S152J  |  | C 3653               | (A,100,35) ELECT. CAPACITOR   | CEAT470M35   |   |
| R 3511   | (B,43,114)                     | RS1/16S563J  |  | C 3661               | (A,58,34)                     | CEAL1R0M50   |   |
| R 3651   | (B,95,66)                      | RS1/16S332J  |  | C 3662               | (A,51,34)                     | CEAL1R0M50   |   |
| R 3654   | (B,100,69)                     | RS1/16S182J  |  | C 3673               | (A,35,59) ELECT. CAPACITOR    | CEAT470M25   | E |
| R 3655   | (B,112,68)                     | RS1/16S822J  |  | C 3674               | (A,28,49) ELECT. CAPACITOR    | CEAT470M25   |   |
| R 3656   | (B,114,68)                     | RS1/16S223J  |  | C 3676               | (B,47,43)                     | CKSRYB103K50 |   |
| R 3657   | (A,102,65)                     | RD1/4PU330J  |  | C 3678               | (B,39,40)                     | CKSRYB103K50 |   |
| R 3658   | (B,97,57)                      | RS1/16S222J  |  | C 3680               | (A,42,59)                     | CEAT1R0M50   |   |
| R 3661   | (B,58,45)                      | RS1/16S471J  |  | <b>POWER ASSY</b>    |                               |              |   |
| R 3662   | (B,56,45)                      | RS1/16S471J  |  | <b>MISCELLANEOUS</b> |                               |              |   |
| R 3663   | (B,46,39)                      | RS1/16S471J  |  | ⚠ IC 41              | (A,150,86) PROTECTOR(7A)      | AEK7021      |   |
| R 3664   | (B,48,39)                      | RS1/16S471J  |  | IC 3055              | (B,29,108) OP-AMP IC          | HA17558AF    |   |
| R 3667   | (B,57,49)                      | RS1/16S474J  |  | IC 3056              | (B,28,140) OP-AMP IC          | HA17558AF    |   |
| R 3668   | (B,55,49)                      | RS1/16S474J  |  | IC 3062              | (B,56,60) ELECTRIC VOL IC 6CH | BD3814FV     | F |
| R 3671   | (B,39,88)                      | RS1/16S103J  |  | ⚠ IC 3101            | (A,145,186) PROTECTOR(7A)     | AEK7047      |   |
| R 3672   | (B,37,91)                      | RS1/16S103J  |  |                      |                               |              |   |
| R 3673   | (B,45,43)                      | RS1/16S681J  |  |                      |                               |              |   |
| R 3674   | (B,35,40)                      | RS1/16S681J  |  |                      |                               |              |   |

| Mark No. | Description                             | Part No.     |
|----------|-----------------------------------------|--------------|
|          | IC 3901(B,47 ,17 ) DUAL OP-AMP          | NJM4565M     |
|          | △ IC 5508(A,207 ,15 ) REGULATOR IC      | NJM78M56FA   |
|          | Q 81 (A,150 ,214 ) TRANSISTOR           | 2SD1858X     |
| A        | Q 82 (B,213 ,22 ) TRANSISTOR            | 2SC4081      |
|          | Q 83 (B,149 ,205 ) DIGITAL TR(SC-70)    | RT1P241M     |
|          | Q 3601(B,94 ,188 ) TRANSISTOR           | 2SC4081      |
|          | Q 3602(B,121 ,189 ) TRANSISTOR          | 2SC4081      |
|          | Q 3631(B,36 ,168 ) TRANSISTOR           | 2SC4081      |
|          | Q 3632(B,29 ,171 ) CHIP TR (PNP X 2)    | UMB1N        |
|          | Q 3633(B,24 ,168 ) CHIP TRANSISTOR      | RN1901       |
|          | Q 3635(B,20 ,163 ) DIGITAL TR(SC-70)    | RT1P241M     |
|          | Q 3637(B,20 ,175 ) TRANSISTOR           | 2SC4081      |
|          | Q 3638(B,17 ,175 ) TRANSISTOR           | 2SC4081      |
| B        | Q 3639(B,14 ,183 ) TRANSISTOR           | 2SA1576A     |
|          | Q 3640(B,33 ,172 ) TRANSISTOR           | RT1N241M     |
|          | Q 3901(B,76 ,18 ) TRANSISTOR            | IMX9         |
|          | Q 3902(B,60 ,17 ) TRANSISTOR            | IMX9         |
|          | Q 3909(B,16 ,17 ) TRANSISTOR            | 2SA1576A     |
|          | △ D 11 (A,174 ,21 ) DIODE               | D5SBA20(B)   |
|          | △ D 21 (A,117 ,13 ) DIODE               | D5SBA20(B)   |
|          | △ D 41 (A,158 ,56 ) DIODE               | D5SBA20(B)   |
|          | △ D 80 (B,227 ,27 ) BRIDGE DIODE        | S1NB60       |
|          | D 87 (B,154 ,205 ) DIODE                | DAN217       |
|          | D 88 (A,169 ,214 ) DIODE                | 1SS133       |
| C        | D 89 (B,218 ,24 ) DIODE                 | UDZS20(B)    |
|          | D 3052(B,78 ,63 ) DIODE                 | UDZS6R8(B)   |
|          | D 3053(B,78 ,56 ) DIODE                 | UDZS6R8(B)   |
|          | D 3601(B,106 ,190 ) DIODE               | MA111        |
|          | D 3602(B,123 ,190 ) DIODE               | MA111        |
|          | D 3603(B,102 ,188 ) DIODE               | DAP202K      |
|          | D 3631(A,36 ,163 ) DIODE                | MTZJ5R1(B)   |
|          | D 3632(A,45 ,163 ) DIODE                | 1SS133       |
|          | D 3633(A,40 ,171 ) DIODE                | 1SS133       |
|          | D 3634(A,36 ,172 ) DIODE                | 1SS133       |
|          | D 3635(B,41 ,167 ) DIODE                | DAN202K      |
| D        | D 3636(B,31 ,163 ) DIODE                | MA111        |
|          | D 3901(B,19 ,50 ) DIODE                 | DAP202K      |
|          | △ L 1 (A,260 ,128 ) LINE FILTER         | XTF3004      |
|          | L 3361(A,98 ,186 ) COIL                 | ATH-059      |
|          | L 3362(A,118 ,186 ) COIL                | ATH-059      |
|          | △ AN1 (A,216 ,230 ) AC INLET 1P         | XKP3084      |
|          | H 1 (A,326 ,101 ) FUSE CLIP             | AKR7001      |
|          | H 1 (A,206 ,202 ) FUSE CLIP             | AKR7001      |
|          | H 2 (A,307 ,60 ) FUSE CLIP              | AKR7001      |
|          | H 2 (A,226 ,202 ) FUSE CLIP             | AKR7001      |
|          | J 3002(A,95 ,131 ) JUMPER WIRE 15P      | D20PYY1515E  |
| E        | JA3302(A,96 ,230 ) SPEAKER TERMINAL 4P  | XKE3038      |
|          | △ RY81 (A,173 ,213 ) POWER RELAY        | XSR3008      |
|          | △ S 1 (A,311 ,220 ) VOLTAGE SELECTOR    | XKX3001      |
|          | △ T 2 (A,207 ,63 ) STANDBY TRANSFORMER  | ATT7080      |
|          | △ CN1 (A,270 ,161 ) CONNECTOR           | B2P3-VH      |
|          | △ CN2 (A,307 ,161 ) 4P-VH CONNECTOR     | B4P7-VH      |
|          | CN4 (A,156 ,87 ) CONNECTOR              | B7P-VH       |
|          | CN3008(A,86 ,9 ) 4PJUMPER CONNECTOR     | 52151-0410   |
|          | CN3011(A,151 ,120 ) FFC CONNECTOR 9P    | 52045-0945   |
|          | CN3012(A,155 ,130 ) 13PJUMPER CONNECTOR | 52147-1310   |
|          | CN3013(A,153 ,167 ) 14PJUMPER CONNECTOR | 52147-1410   |
| F        | CN3051(A,13 ,85 ) 27P CONNECTOR         | 52044-2745   |
|          | SCREW                                   | BBZ30P080FTC |
|          | 1 PCB BINDER                            | VEF1040      |
|          | 3603(A,136 ,230 ) PIN JACK(2P)          | AKB1233      |

## Mark No. Description

2 PCB BINDER

## RESISTORS

R 81 (B,155 ,210 )  
R 83 (B,151 ,210 )  
R 85 (B,153 ,210 )  
R 87 (B,157 ,210 )  
R 88 (B,218 ,16 )

R 89 (B,215 ,23 )  
R 90 (B,143 ,211 )  
R 3101(B,47 ,71 )  
R 3102(B,41 ,71 )  
R 3107(B,36 ,132 )

R 3108(B,37 ,148 )  
R 3113(B,66 ,94 )  
R 3114(B,63 ,111 )  
R 3115(B,70 ,94 )  
R 3116(B,65 ,111 )

R 3118(A,82 ,81 )  
R 3119(A,79 ,71 )  
R 3140(B,65 ,70 )  
R 3141(B,63 ,70 )  
R 3143(B,61 ,70 )

R 3146(B,38 ,99 )  
R 3147(B,36 ,99 )  
R 3151(B,21 ,139 )  
R 3152(B,21 ,143 )  
R 3155(B,27 ,132 )

R 3156(B,23 ,148 )  
R 3159(B,34 ,132 )  
R 3160(B,35 ,148 )  
R 3163(A,45 ,127 )  
R 3178(A,12 ,121 )

R 3207(B,33 ,116 )  
R 3208(A,38 ,103 )  
R 3302(B,13 ,132 )  
R 3303(B,31 ,148 )  
R 3311(B,30 ,53 )

R 3312(B,30 ,49 )  
R 3313(B,59 ,39 )  
R 3314(B,65 ,49 )  
R 3316(B,67 ,45 )  
R 3317(B,65 ,45 )

R 3318(B,63 ,49 )  
R 3320(B,63 ,45 )  
R 3321(B,61 ,45 )  
R 3334(B,32 ,49 )  
R 3335(B,32 ,53 )

R 3344(B,23 ,110 )  
R 3345(B,29 ,116 )  
R 3346(B,31 ,116 )  
R 3347(B,25 ,116 )  
R 3348(B,23 ,116 )

R 3349(B,27 ,116 )  
R 3351(B,25 ,100 )  
R 3352(B,21 ,100 )  
R 3353(B,23 ,100 )  
R 3355(B,39 ,108 )

R 3356(B,31 ,100 )  
R 3357(B,40 ,99 )

## Part No.

VEF1040

RS1/16S102J  
RS1/16S180J  
RS1/16S180J  
RS1/16S103J  
RS1/16S222J

RS1/16S223J  
RS1/16S273J  
RS1/16S472J  
RS1/16S472J  
RS1/16S0R0J

RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S0R0J

RD1/2PM151J  
RD1/2PM151J  
RS1/16S102J  
RS1/16S102J  
RS1/16S103J

RS1/16S123J  
RS1/16S564J  
RS1/16S822J  
RS1/16S822J  
RS1/16S223J

RS1/16S223J  
RS1/16S223J  
RS1/16S223J  
RD1/4PU220J  
RD1/4PU220J

RS1/16S220J  
RD1/4PU220J  
RS1/16S822J  
RS1/16S822J  
RS1/16S333J

RS1/16S333J  
RS1/16S104J  
RS1/16S103J  
RS1/16S332J  
RS1/16S332J

RS1/16S103J  
RS1/16S682J  
RS1/16S682J  
RS1/16S103J  
RS1/16S103J

RS1/16S472J  
RS1/16S103J  
RS1/16S101J  
RS1/16S103J  
RS1/16S103J

RS1/16S103J  
RS1/16S103J  
RS1/16S103J  
RS1/16S103J  
RS1/16S472J

RS1/16S103J  
RS1/16S101J

| 5                   |                      |              | 6                   |                               |              | 7        |             |          | 8        |             |          |
|---------------------|----------------------|--------------|---------------------|-------------------------------|--------------|----------|-------------|----------|----------|-------------|----------|
| Mark No.            | Description          | Part No.     | Mark No.            | Description                   | Part No.     | Mark No. | Description | Part No. | Mark No. | Description | Part No. |
| R 3361(A,90 ,183 )  | CARBON FILM RESISTOR | RD1/2PMF101J | △ C 1               | (A,234 ,205 ) FILM CAPACITOR  | ACE7013      |          |             |          |          |             |          |
| R 3362(A,109 ,183 ) | CARBON FILM RESISTOR | RD1/2PMF101J | △ C 3               | (A,250 ,155 ) FILM CAPACITOR  | ACE7013      |          |             |          |          |             |          |
| R 3363(B,98 ,196 )  |                      | RS1/16S4R7J  | C 11                | (A,180 ,37 ) ELECT. CAPACITOR | XCH3024      |          |             |          |          |             | A        |
|                     |                      |              | C 12                | (A,156 ,38 ) ELECT. CAPACITOR | XCH3024      |          |             |          |          |             |          |
| R 3364(B,114 ,197 ) |                      | RS1/16S4R7J  | C 21                | (A,109 ,52 ) ELECT. CAPACITOR | XCH3023      |          |             |          |          |             |          |
| R 3365(B,94 ,205 )  |                      | RS1/10S220J  |                     |                               |              |          |             |          |          |             |          |
| R 3366(B,101 ,211 ) |                      | RS1/10S220J  | C 22                | (A,109 ,73 ) ELECT. CAPACITOR | XCH3023      |          |             |          |          |             |          |
| R 3367(B,97 ,205 )  |                      | RS1/10S220J  | C 41                | (A,134 ,71 ) ELECT. CAPACITOR | CEAT682M25   |          |             |          |          |             |          |
| R 3368(B,103 ,212 ) |                      | RS1/10S220J  | C 82                | (A,221 ,22 ) ELECT. CAPACITOR | CEAT102M25   |          |             |          |          |             |          |
|                     |                      |              | C 83                | (A,196 ,11 )                  | CEAT1R0M50   |          |             |          |          |             |          |
| R 3375(B,58 ,45 )   |                      | RS1/16S0R0J  | C 84                | (A,213 ,11 )                  | CEAT100M50   |          |             |          |          |             |          |
| R 3393(B,62 ,94 )   |                      | RS1/16S0R0J  |                     |                               |              |          |             |          |          |             |          |
| R 3394(B,59 ,111 )  |                      | RS1/16S0R0J  | C 85                | (B,194 ,10 )                  | CKSRYB103K50 |          |             |          |          |             |          |
| R 3601(B,102 ,182 ) |                      | RS1/16S182J  | C 3113(A,75 ,65 )   |                               | CEAT221M10   |          |             |          |          |             |          |
| R 3602(B,120 ,182 ) |                      | RS1/16S182J  | C 3114(A,75 ,57 )   |                               | CEAT221M10   |          |             |          |          |             |          |
|                     |                      |              | C 3115(B,74 ,68 )   |                               | CKSRYB103K50 |          |             |          |          |             |          |
| R 3603(B,106 ,186 ) |                      | RS1/16S333J  | C 3116(B,43 ,58 )   |                               | CKSRYB103K50 |          |             |          |          |             | B        |
| R 3604(B,118 ,182 ) |                      | RS1/16S333J  |                     |                               |              |          |             |          |          |             |          |
| R 3605(B,90 ,188 )  |                      | RS1/16S273J  | C 3121(B,51 ,71 )   |                               | CKSRYB104K16 |          |             |          |          |             |          |
| R 3606(B,114 ,189 ) |                      | RS1/16S273J  | C 3122(B,49 ,71 )   |                               | CKSRYB104K16 |          |             |          |          |             |          |
| R 3607(A,89 ,180 )  | RESISTOR (0.1OHM,2W) | ACN7112      | C 3123(B,45 ,71 )   |                               | CKSRYB104K16 |          |             |          |          |             |          |
|                     |                      |              | C 3124(B,43 ,71 )   |                               | CKSRYB104K16 |          |             |          |          |             |          |
| R 3608(A,109 ,180 ) | RESISTOR (0.1OHM,2W) | ACN7112      | C 3125(B,42 ,67 )   |                               | CKSRYB472K50 |          |             |          |          |             |          |
| R 3631(A,42 ,163 )  |                      | RD1/4PU223J  |                     |                               |              |          |             |          |          |             |          |
| R 3632(A,39 ,163 )  |                      | RD1/4PU223J  | C 3126(B,44 ,67 )   |                               | CKSRYB472K50 |          |             |          |          |             |          |
| R 3633(A,30 ,182 )  |                      | RD1/4PU682J  | C 3131(B,65 ,73 )   |                               | CCSRCH101J50 |          |             |          |          |             |          |
| R 3634(A,33 ,182 )  |                      | RD1/4PU272J  | C 3132(B,63 ,73 )   |                               | CCSRCH101J50 |          |             |          |          |             |          |
|                     |                      |              | C 3147(B,35 ,142 )  |                               | CKSRYB103K50 |          |             |          |          |             |          |
| R 3635(A,50 ,172 )  |                      | RD1/4PU332J  | C 3148(B,23 ,139 )  |                               | CKSRYB103K50 |          |             |          |          |             |          |
| R 3638(B,14 ,176 )  |                      | RS1/16S103J  |                     |                               |              |          |             |          |          |             | C        |
| R 3639(B,24 ,176 )  |                      | RS1/16S273J  | C 3149(A,44 ,152 )  |                               | CEAT470M16   |          |             |          |          |             |          |
| R 3668(A,7 ,192 )   |                      | RD1/4PU223J  | C 3150(A,9 ,141 )   |                               | CEAT470M16   |          |             |          |          |             |          |
| R 3669(B,8 ,184 )   |                      | RS1/16S223J  | C 3171(B,35 ,112 )  |                               | CKSRYB103K50 |          |             |          |          |             |          |
|                     |                      |              | C 3172(B,35 ,109 )  |                               | CKSRYB103K50 |          |             |          |          |             |          |
| R 3701(B,42 ,139 )  |                      | RS1/16S472J  | C 3173(A,32 ,37 )   |                               | CEAT100M50   |          |             |          |          |             |          |
| R 3702(B,42 ,143 )  |                      | RS1/16S472J  |                     |                               |              |          |             |          |          |             |          |
| R 3901(A,75 ,27 )   |                      | RD1/4PU330J  | C 3174(A,25 ,37 )   |                               | CEAT100M50   |          |             |          |          |             |          |
| R 3902(A,78 ,8 )    |                      | RD1/4PU330J  | C 3189(A,39 ,136 )  |                               | CEAT1R0M50   |          |             |          |          |             |          |
| R 3905(B,67 ,26 )   |                      | RS1/16S222J  | C 3190(A,39 ,143 )  |                               | CEAT1R0M50   |          |             |          |          |             |          |
|                     |                      |              | C 3311(A,54 ,37 )   |                               | CEAT1R0M50   |          |             |          |          |             |          |
| R 3906(B,67 ,14 )   |                      | RS1/16S222J  | C 3312(B,57 ,39 )   |                               | CKSRYB104K16 |          |             |          |          |             |          |
| R 3910(B,71 ,9 )    |                      | RS1/16S473J  |                     |                               |              |          |             |          |          |             |          |
| R 3911(A,72 ,27 )   |                      | RD1/4PU330J  | C 3315(A,71 ,44 )   |                               | CEANPR47M50  |          |             |          |          |             | D        |
| R 3912(A,74 ,8 )    |                      | RD1/4PU330J  | C 3316(A,78 ,49 )   |                               | CEAT1R0M50   |          |             |          |          |             |          |
| R 3916(B,17 ,12 )   |                      | RS1/16S153J  | C 3319(A,67 ,41 )   |                               | CEANPR33M50  |          |             |          |          |             |          |
|                     |                      |              | C 3320(A,78 ,39 )   |                               | CEAT1R0M50   |          |             |          |          |             |          |
| R 3917(B,65 ,26 )   |                      | RS1/16S222J  | C 3334(B,34 ,49 )   |                               | CKSRYB103K50 |          |             |          |          |             |          |
| R 3918(B,65 ,14 )   |                      | RS1/16S222J  |                     |                               |              |          |             |          |          |             |          |
| R 3921(B,26 ,12 )   |                      | RS1/16S393J  | C 3335(B,34 ,53 )   |                               | CKSRYB103K50 |          |             |          |          |             |          |
| R 3922(B,41 ,13 )   |                      | RS1/16S393J  | C 3336(B,29 ,132 )  |                               | CKSRYB221K50 |          |             |          |          |             |          |
| R 3923(B,45 ,25 )   |                      | RS1/16S222J  | C 3337(B,33 ,148 )  |                               | CKSRYB221K50 |          |             |          |          |             |          |
|                     |                      |              | C 3361(B,100 ,196 ) |                               | CKSRYB223K25 |          |             |          |          |             |          |
| R 3924(B,44 ,8 )    |                      | RS1/16S222J  | C 3362(B,112 ,197 ) |                               | CKSRYB223K25 |          |             |          |          |             |          |
| R 3925(B,51 ,25 )   |                      | RS1/16S393J  |                     |                               |              |          |             |          |          |             |          |
| R 3926(B,50 ,8 )    |                      | RS1/16S393J  | C 3363(B,96 ,196 )  |                               | CKSRYB223K25 |          |             |          |          |             | E        |
| R 3927(B,56 ,8 )    |                      | RS1/16S470J  | C 3364(B,112 ,201 ) |                               | CKSRYB223K25 |          |             |          |          |             |          |
| R 3928(B,29 ,19 )   |                      | RS1/16S470J  | C 3365(B,96 ,209 )  |                               | CKSRYB473K25 |          |             |          |          |             |          |
|                     |                      |              | C 3366(B,106 ,211 ) |                               | CKSRYB473K25 |          |             |          |          |             |          |
| R 3929(B,57 ,20 )   |                      | RS1/16S104J  | C 3367(B,96 ,213 )  |                               | CKSRYB473K25 |          |             |          |          |             |          |
| R 3930(B,57 ,16 )   |                      | RS1/16S104J  |                     |                               |              |          |             |          |          |             |          |
| R 3933(B,58 ,8 )    |                      | RS1/16S470J  | C 3368(B,109 ,212 ) |                               | CKSRYB473K25 |          |             |          |          |             |          |
| R 3934(B,31 ,19 )   |                      | RS1/16S470J  | C 3369(B,92 ,221 )  | CHIP CAPACITOR                | XCG3008      |          |             |          |          |             |          |
| R 3935(B,63 ,26 )   |                      | RS1/16S820J  | C 3370(B,101 ,221 ) | CHIP CAPACITOR                | XCG3008      |          |             |          |          |             |          |
|                     |                      |              | C 3631(A,34 ,185 )  | ELECT. CAPACITOR              | CEAT2R2M2A   |          |             |          |          |             |          |
| R 3936(B,69 ,9 )    |                      | RS1/16S820J  | C 3632(A,17 ,180 )  | ELECT. CAPACITOR              | CEAT471M6R3  |          |             |          |          |             |          |
| R 3937(B,61 ,26 )   |                      | RS1/16S820J  |                     |                               |              |          |             |          |          |             |          |
| R 3938(B,67 ,9 )    |                      | RS1/16S820J  |                     |                               |              |          |             |          |          |             |          |
| R 3943(B,19 ,12 )   |                      | RS1/16S102J  | C 3633(A,25 ,181 )  |                               | CEAT100M50   |          |             |          |          |             |          |
| R 3944(B,19 ,16 )   |                      | RS1/16S102J  | C 3668(B,10 ,184 )  |                               | CKSRYB103K50 |          |             |          |          |             | F        |
|                     |                      |              | C 3901(B,72 ,17 )   |                               | CKSRYB102K50 |          |             |          |          |             |          |
|                     |                      |              | C 3902(B,80 ,18 )   |                               | CKSRYB102K50 |          |             |          |          |             |          |
|                     |                      |              | C 3906(A,21 ,8 )    |                               | CEAT100M50   |          |             |          |          |             |          |

## CAPACITORS

| Mark No. | Description                             | Part No.     |
|----------|-----------------------------------------|--------------|
| A        | C 3909(B,47 ,25 )                       | CCSRCH470J50 |
|          | C 3910(B,46 ,8 )                        | CCSRCH470J50 |
|          | C 3911(A,36 ,22 )                       | CEAT470M16   |
|          | C 3912(A,34 ,8 )                        | CEAT470M16   |
|          | C 3913(B,49 ,25 )                       | CCSRCH101J50 |
|          | C 3914(B,48 ,8 )                        | CCSRCH101J50 |
|          | C 3915(B,54 ,16 )                       | CKSRYB104K16 |
|          | C 3916(B,41 ,20 )                       | CKSRYB104K16 |
|          | C 3917(A,36 ,15 )                       | CEAT100M50   |
|          | C 3918(A,28 ,15 )                       | CEAT100M50   |
| B        | C 3923(A,82 ,92 )                       | CEAT100M50   |
|          | C 3924(A,75 ,92 )                       | CEAT100M50   |
|          | C 3925(A,64 ,10 ) ELECT. CAPACITOR      | CEANP470M16  |
|          | C 3926(A,57 ,25 ) ELECT. CAPACITOR      | CEANP470M16  |
|          | C 3954(A,132 ,143 )                     | CEAT470M16   |
|          | C 9011(A,177 ,66 ) MYLAR FILM CAPACITOR | CQMA333K2E   |
|          | C 9021(A,165 ,71 ) MYLAR FILM CAPACITOR | CQMA333K2E   |
|          | C 9041(A,146 ,70 ) MYLAR FILM CAPACITOR | CQMA333K2E   |

K

TRADE ASSY

MISCELLANEOUS

|                  |                                      |             |
|------------------|--------------------------------------|-------------|
| C                | J 3032(A,290 ,48 ) JUMPER WIRE 13P   | D20PYY1315E |
|                  | J 3033(A,290 ,13 ) JUMPER WIRE       | D20PYY1415E |
|                  | CN3021(A,262 ,91 ) 23P SOCKET        | XKP3082     |
|                  | CN3022(A,262 ,51 ) 23P SOCKET        | XKP3082     |
|                  | CN3031(A,287 ,100 ) FFC CONNECTOR 9P | 52045-0945  |
| 13P CABLE HOLDER |                                      | 51048-1300  |

D

E

F

# 6. ADJUSTMENT

## 6.1 DECK SECTION

### 6.1.1 ADJUSTMENT CONDITION



#### ■ Adjustment Condition

- (1) The ground at the time of adjustment shall be W166.  
(Refer to Fig. 6-3).
  - (2) Clean the heads and demagnetize them using a head eraser.
  - (3) Set the measurement level to 0 dBV = 1 Vrms.
  - (4) Use the specified tape for adjustment. Use the labeled (A) side of the test tape.
    - NCT-111 : For Tape Speed adjustment
    - NCT-112 : For Playback adjustment
    - STD-633 : Normal blank tape
- \* As the reference recording level is 250 nwb/m for NCT-112, the recording level will be higher than 4 dB for NCT-112 (160nwb/m). When adjusting, pay carefully attention to the type of tape used.
- (5) Provide yourself with the following measuring devices:
    - AC millivoltmeter
    - Low-frequency oscillator
    - Attenuator
    - Oscilloscope
  - (6) Adjust both right and left channels unless other wise specified.
  - (7) Turn the DOLBY NR switch off unless otherwise specified.
  - (8) Warm up the unit for several minutes before adjustment. In particular, be sure to warm up the unit in the REC/PLAY mode for 3 to 5 minutes before starting recording/playback frequency characteristics adjustment.
  - (9) Always follow the indicated adjustment order.  
Otherwise, a complete adjustment may not be achieved.

#### ■ List of Adjustments

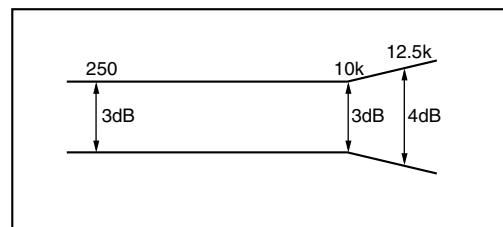
##### ● Playback Section

- (1) Tape Speed Confirmation
- (2) Head Azimuth Adjustment
- (3) Playback Level Adjustment

##### ● Recording Section

- (1) Recording Bias Adjustment
- (2) Recording Level Adjustment

#### PLAY BACK



#### RECORDING

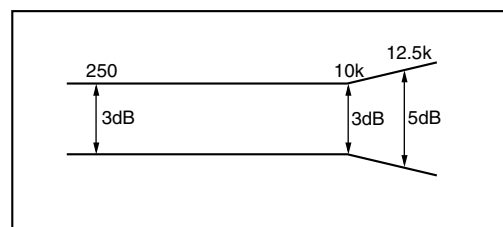


Fig. 6-1 Frequency Characteristics

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.  
“DOLBY” and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

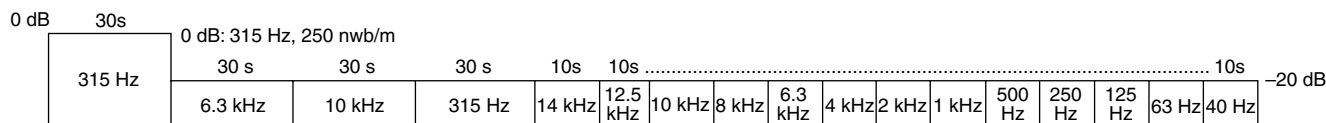


Fig. 6-2 Test Tape NCT-112

## 6.1.2 PLAYBACK and RECORDING SECTION

### ■ Playback Section

#### (1) Tape Speed Confirmation

| No. | Mode | Input Signal/Test Tape | Adjustment Points                             | Measurement Points        | Adjustment Value    | Remarks                                                       |
|-----|------|------------------------|-----------------------------------------------|---------------------------|---------------------|---------------------------------------------------------------|
| 1   | PLAY | NCT-111 (3 kHz)        | ADJ. VR on CASSETTE MECHA (Refer to Fig. 6-3) | P1 R (CN2507) (IFAF ASSY) | 3000 Hz $\pm 10$ Hz | FWD adjustment<br>REV Confirmation<br>( 3000 Hz $\pm 40$ Hz ) |

#### (2) Head Azimuth Adjustment

- This unit is equipped with auto tape selector.
- Do not switch between forward and reverse operation with the screwdriver inserted.

| No. | Mode | Input Signal/Test Tape                       | Adjustment Points                                 | Measurement Points                         | Adjustment Value           | Remarks                                                                    |
|-----|------|----------------------------------------------|---------------------------------------------------|--------------------------------------------|----------------------------|----------------------------------------------------------------------------|
| 1   | PLAY | NCT-110 test tape (Playback: 10 kHz, -20 dB) | Head azimuth adjustment Screw (Refer to Fig. 6-3) | P3 L (CN2507)<br>P1 R (CN2507) (IFAF ASSY) | Max. Playback signal level | After adjustment, apply silicon bond to the head azimuth adjustment screw. |

#### (3) Playback Level Adjustment

- Since this adjustment determines playback DolbyNR level, Perform it carefully.

| No. | Mode | Input Signal/Test Tape                     | Adjustment Points |        | Measurement Points                         | Adjustment Value | Remarks |
|-----|------|--------------------------------------------|-------------------|--------|--------------------------------------------|------------------|---------|
| 1   | PLAY | NCT-112 test tape (Playback: 315 Hz, 4 dB) | L ch              | VR2301 | P3 L (CN2507)<br>P1 R (CN2507) (IFAF ASSY) | -3.7 dBV         |         |
|     |      |                                            | R ch              | VR2302 |                                            |                  |         |

### ■ Recording Section

#### (1) Recording Bias Adjustment

- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

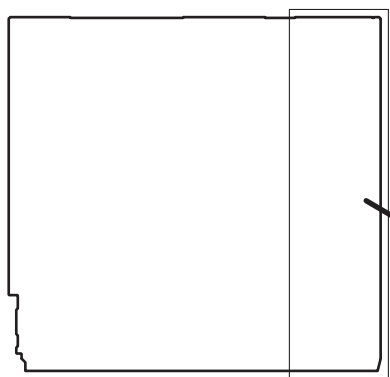
| No. | Mode          | Input Signal/Test Tape                                                                           | Adjustment Points  |        | Measurement Points                            | Adjustment Value                                                                                                | Remarks |
|-----|---------------|--------------------------------------------------------------------------------------------------|--------------------|--------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------|
| 1   | REC/<br>PAUSE | Input a 315Hz signal to the LINE - IN terminal. *                                                | Input signal level |        | P3 L (CN2507)<br>P1 R (CN2507)<br>(IFAF ASSY) | -23.7 dBV                                                                                                       |         |
| 2   | REC →<br>PLAY | Load the STD-633 test tape and record/playback the 315Hz and 10kHz signals. (see the Note below) | L ch               | VR2801 |                                               | Repeat adjustment until playback level of the 10kHz signal is within 0dBV ±0.5dB from that of the 315Hz signal. |         |
|     |               |                                                                                                  | R ch               | VR2802 |                                               |                                                                                                                 |         |

Note: Set the 10kHz input signal level to the same value as the 315Hz input signal level of step 1.

#### (2) Recording Level Adjustment

| No. | Mode          | Input Signal/Test Tape                                  | Adjustment Points  |        | Measurement Points                            | Adjustment Value                                                                                          | Remarks |
|-----|---------------|---------------------------------------------------------|--------------------|--------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------|
| 1   | REC/<br>PAUSE | Input a 315Hz signal to the LINE-IN terminal.*          | Input signal level |        | P3 L (CN2507)<br>P1 R (CN2507)<br>(IFAF ASSY) | -7.7 dBV                                                                                                  |         |
| 2   | REC →<br>PLAY | STD-633 test tape and record/playback the 315Hz signal. | L ch               | VR2401 |                                               | Repeat recording, playback and adjustment until playback level of the 315Hz signal becomes -7.7dBV±0.5dB. |         |
|     |               |                                                         | R ch               | VR2402 |                                               |                                                                                                           |         |

● IFAF ASSY **C**



● MECHANISM UNIT

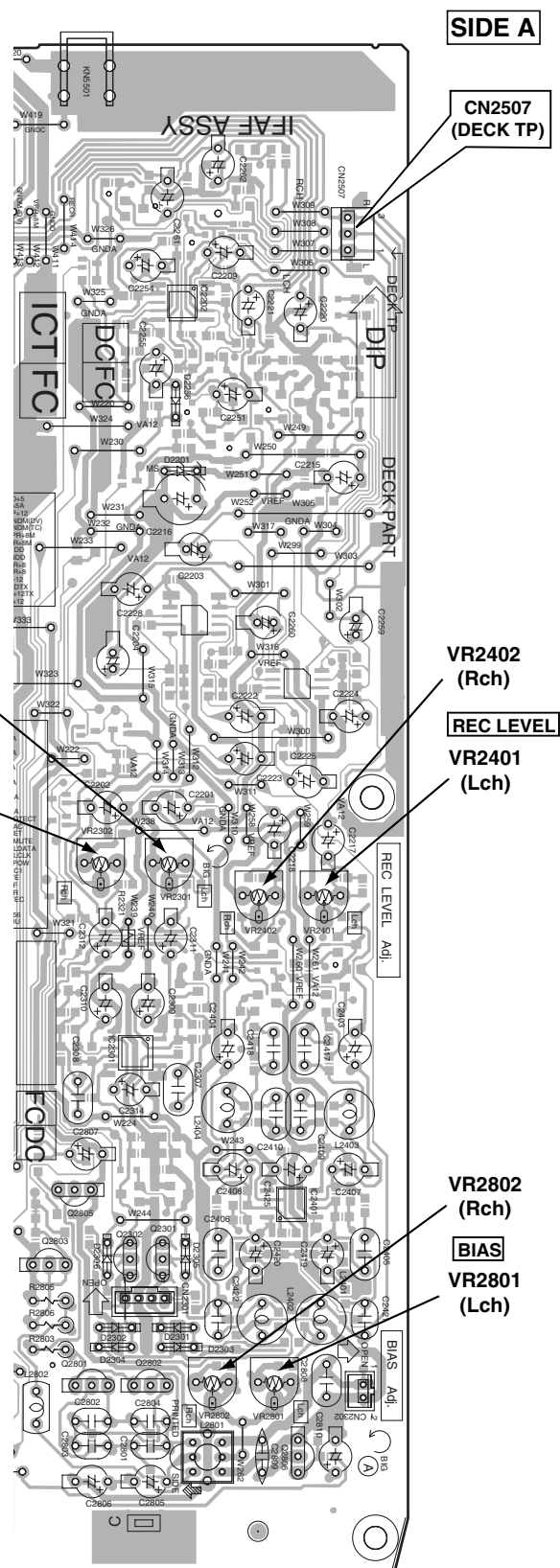
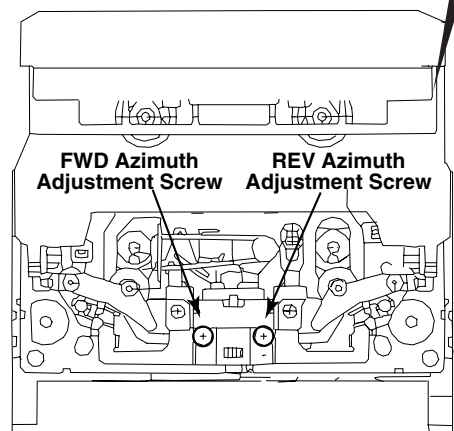
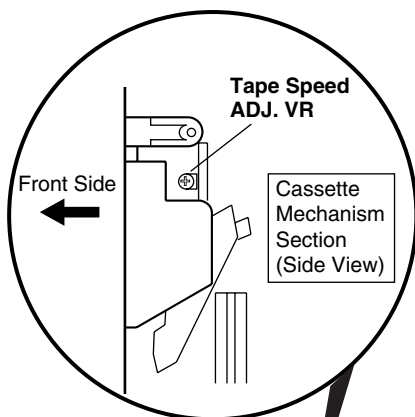


Fig. 6-3 Adjustment and Measurement Points

1234

6.2 DVD SECTION

6.2.1 ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Items

- [Mechanism Part]
- 1

Tangential and Radial Height Coarse Adjustment
- 2

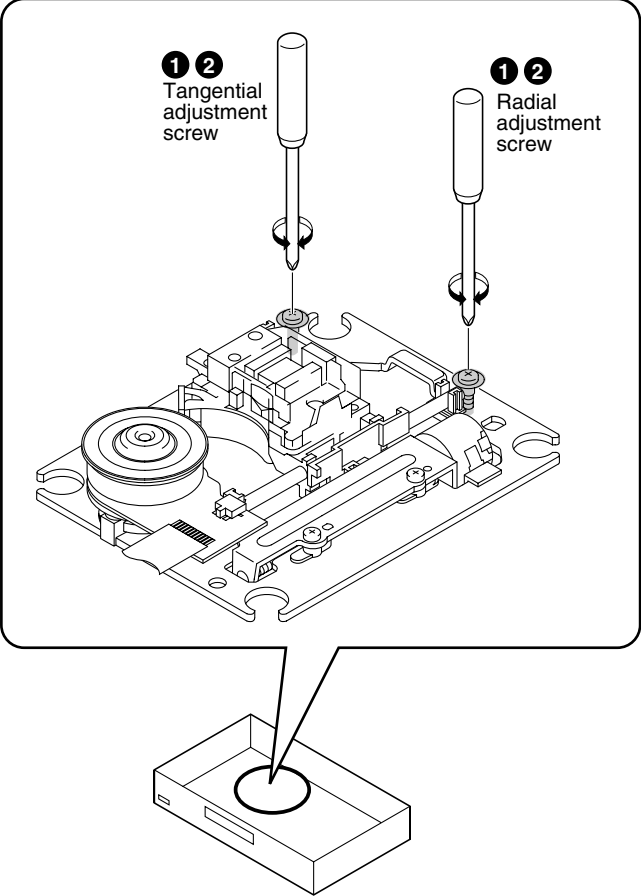
DVD Error Rate Adjustment

[Electrical Part]

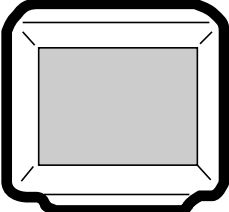
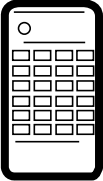
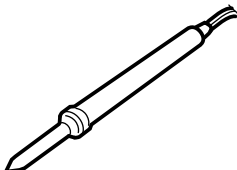
Electrical adjustments are not required.

■ Adjustment Points (Mechanism Part)

**Cautions:** After adjustment, adjustment screw locks with the Screw tight.



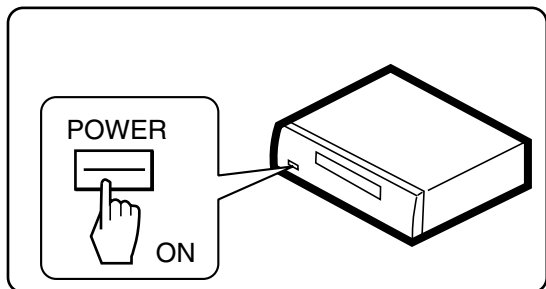
6.2.2 JIGS AND MEASURING INSTRUMENTS

|                                                                                                              |                                                                                                                |                                                                                                       |                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <br>⊕ Screwdriver (large) | <br>⊕ Screwdriver (medium)  | <br>TV monitor     | <br>Test mode remote control unit (GGF1381) |
| <br>⊕ Precise screwdriver | <br>DVD test disc (GGV1025) | <br>Soldering iron | Screw tight (GYL1001)                                                                                                            |

| When                                                                                                                                                                           | Adjustment Points                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <div> <div>Exchange Parts of Mechanism</div> <div> <div>Exchange the 05SD Pickup Assy</div> <div> <div>Mechanical point</div> <div>Electric point</div> </div> </div> </div>   | <div> <div> <div>①, ②</div> <div>* After adjustment, screw locks with the Screw tight.</div> </div> <div> <div></div> <div></div> </div> </div> |
| <div> <div>Exchange the Traverse Mechanism Assy-S</div> <div> <div>Mechanical point</div> <div>Electric point</div> </div> </div>                                              | <div> <div></div> <div></div> </div>                                                                                                            |
| <div> <div>Exchange the Spindle Motor</div> <div> <div>Mechanical point</div> <div>Electric point</div> </div> </div>                                                          | <div> <div> <div>②</div> <div>* After adjustment, screw locks with the Screw tight.</div> </div> <div> <div></div> <div></div> </div> </div>    |
| <div> <div>Exchange PCB Assy</div> <div> <div>Exchange PC Board<br/>LOAB and DVDM ASSYS</div> <div> <div>Mechanical point</div> <div>Electric point</div> </div> </div> </div> | <div> <div></div> <div></div> </div>                                                                                                            |

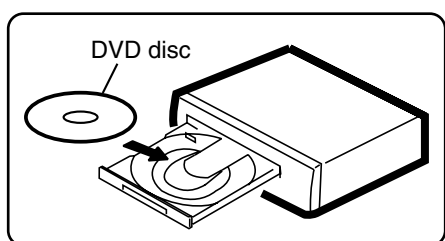
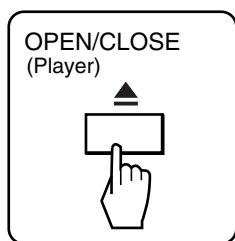
## 6.2.4 TEST MODE

### POWER ON

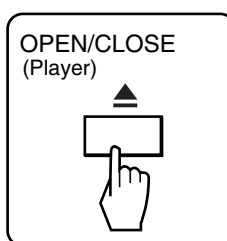


### DISC SET

#### <TRAY OPEN>



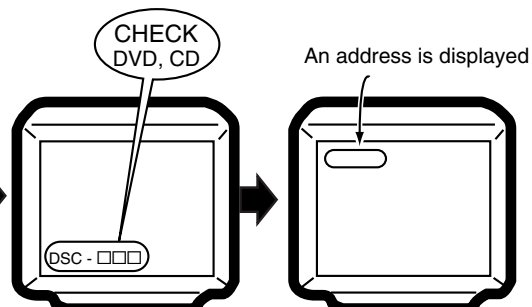
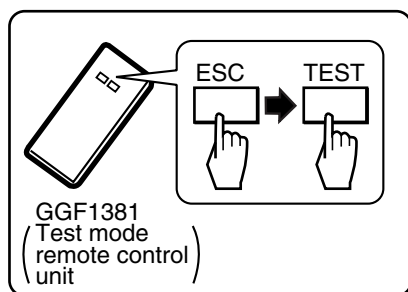
#### <TRAY CLOSE>



### TEST MODE: PLAY

#### <PLAY>

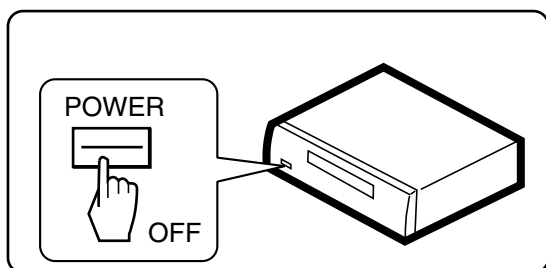
Press the play key (▶) of the normal remote control unit.



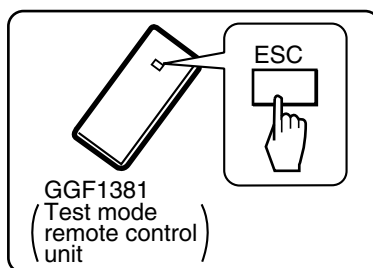
Notes:

- After going into test mode, if you play back the disc, "DISC-NON" is displayed.
- The video signal and the audio signal are outputted during the test mode.
- The SKIP key and the SCAN key are effective during the test mode.

### TEST MODE: OFF



OR





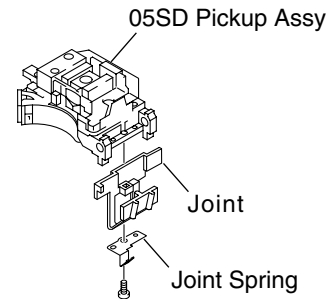
## 1 Tangential and Radial Height Coarse Adjustment

### START

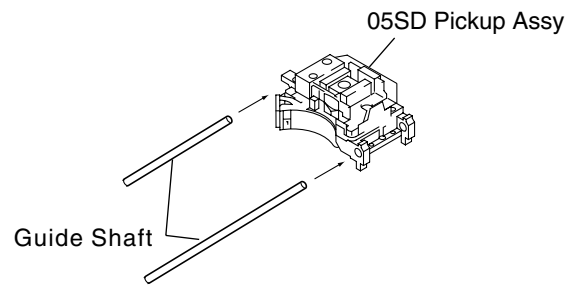
- Remove the 05SD Pickup Assy from the Traverse Mechanism Assy-S.
- Remove the joint and the joint spring of the 05SD Pickup Assy.

**Note:**

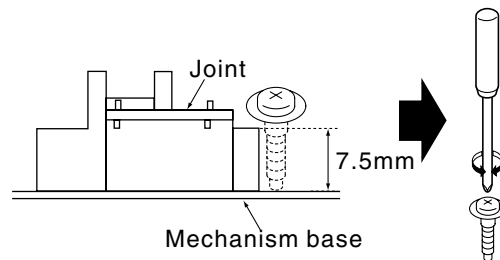
Before removing the flexible cable for the pickup, soldering of the pickup circuit is necessary.  
For details, see "7.1.10 DISASSEMBLY".



- Pass through the guide shaft to a new 05SD Pickup Assy.
- Attach it to the Traverse Mechanism Assy-S.



- Put the joint between the Tangential (or Radial) adjustment screw and the mechanism base and turn each screw to adjust the height.  
(Refer to "6.2.1 ADJUSTMENT ITEMS AND LOCATION".)



- Attach the Traverse Mechanism Assy-S to the 05 LOADER Assy.
- Turn it over and attach the joint and the joint spring.
- Arrange the flexible cables.  
(Refer to "7.1.10 DISASSEMBLY".)

## 2 DVD Error Rate Adjustment

Notes:

- Use disc: GGV1025

### START

- Play the DVD test disc at inner track
- Display ERROR RATE on the monitor



Traverse Mechanism Assy-S  
Adjust the radial adjustment screw so that ERROR RATE becomes around "5E-4". ● A

ERROR RATE : "5E-4"

- Play the DVD test disc at inner track (around #30000)

Traverse Mechanism Assy-S  
Fasten the radial adjustment screw so that ERROR RATE becomes around "1E-3". ● B

ERROR RATE : "1E-3"

- Unfasten the radial adjustment screw by 90 degrees step till ERROR RATE becomes around "1E-3" again. ● C
- Record the number of rotation (N1). (memorizing how much the screw was rotated.)

- Fasten the radial adjustment screw till the number of rotation becomes half of N1. ● Best Radial point



- Play the DVD test disc at outer track (around #200000)

→ Service mode

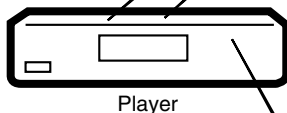
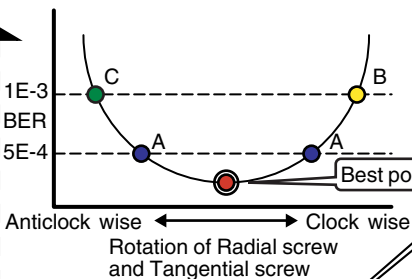


Traverse Mechanism Assy-S  
Fasten the tangential adjustment screw so that ERROR RATE becomes around "1E-3". ● B

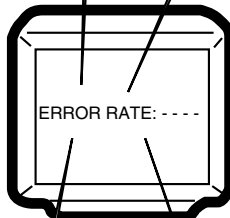
ERROR RATE : "1E-3"

- Unfasten the tangential screw by 90 degrees step till ERROR RATE becomes around "1E-3" again. ● C
- Record the number of rotation (N1).

- Fasten the tangential adjustment screw till the number of rotation becomes half of N1. ● Best tangential point



Player



Monitor

Turn the POWER OFF in case of NG once, and perform the adjustment once again.

If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight. Screw tight: GYL1001



### CHECK

In this check, the error rate that is less than "5E-5" is better.

Disc playback normally.  
• The measurement of block error rate



Service mode end

## 7. GENERAL INFORMATION

### 7.1 DIAGNOSIS

#### 7.1.1 TEST MODE

##### Test Mode Functional Specification

##### ① Test mode entry

- In the power ON state, press the [ESC] (A8-5F) key and [TEST] (A8-5E) key in order of the Test mode remote control unit.
- OSD displays test mode.

##### ② LD ON

Enter the test mode.

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650n).

CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780n).

##### ③ Release the Test mode

- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit and reset it.

7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE

A

B

C

D

E

F

G

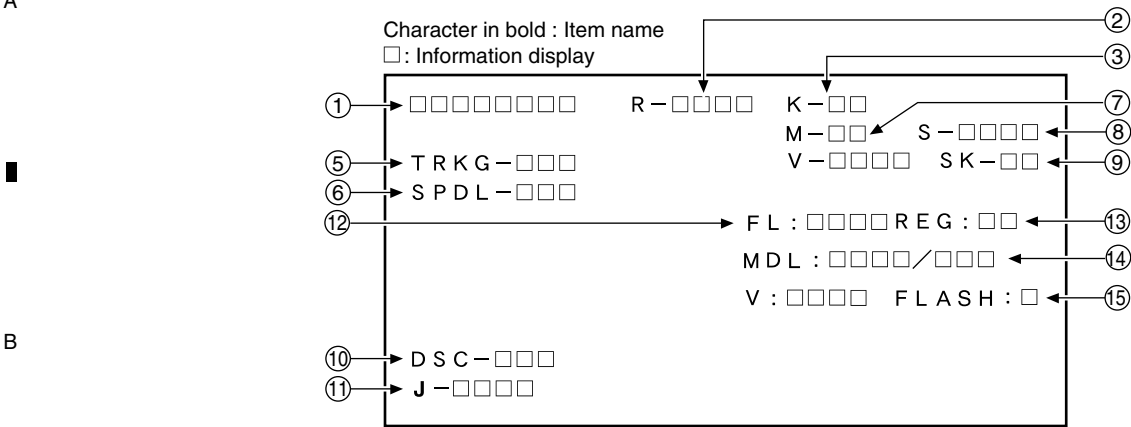
H

I

J

K

L



① Address indication

The address being traced is displayed in number.  
(as for the DVD, indication of decimal number is possible.)  
DVD : ID indication (hexadecimal number, 8 digits)

② Code indication of remote control unit [R - \* \* \* \*]

In case of double code, display a 2nd code.

③ Main unit keycode indication [K - \* \*]

⑤ Tracking status [TRKG - \* \* \*]

Tracking on : [ON]  
Tracking off : [OFF]

⑥ Spindle status [SPDL - \* \* \*]

CLV : [CLV]  
Off : [OFF]

⑦ Mechanism (loading) position value [M - \* \*]

Unknown : [01] or [41]  
Open state : [04]  
Close state : [08]  
During opening : [12]  
During closing : [22]

⑧ Slider position [S - \* \* \* \*]

In Side Switch ON : [01]  
In Side Switch OFF : [00]

⑨ Output video system [V - \* \* \* \*]

NTSC system : [NTSC]  
PAL system : [PAL]  
Automatic setting : [AUTO]

Scart terminal output [SK - \* \*]

(Display only the WY model which can do the output setting  
of scart terminal.)

VIDEO : [00]  
S-VIDEO : [01]  
RGB : [02]

⑩ Disc sensing [DSC - \* \* \*]

The type of discs loaded is displayed.  
[DVD], [CD]

⑪ Jitter value [J - \* \* \* \*]

Note: Don't use it.

⑫ Version of the FL controller [FL: \* \* \* \*]

Note: Don't use it.

⑬ Region setting of the player [REG: \*]

Setting value : [1] to [6]

⑭ Destination setting of the FL controller  
[MDL: \* \* \* \* / \* \* \*]

Four characters in the front represent code 01.  
Three characters in the back represent the destination code.  
J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM: /RAM,  
LB: /LB, WY: /WY

⑮ Version of the flash ROM [V: \* . \* \*]  
Flash ROM size [FLASH = \* \*]

### 7.1.3 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

| Command Contents                                                     | Conditions                              | Remote Control Key Name                  | Remote Control Code              |
|----------------------------------------------------------------------|-----------------------------------------|------------------------------------------|----------------------------------|
| Memory clear and region / revision indication                        |                                         | CLEAR (*1)                               | A8-45                            |
| Average value measurement of DVD error rate                          |                                         | 5 (*1)                                   | A8-05                            |
| CD error rate measurement                                            |                                         | 5 (*1)                                   | A8-05                            |
| Scart terminal output : VIDEO                                        | WY, models equipped with Scart terminal | AUDIO                                    | A3-BE                            |
| Scart terminal output : S-VIDEO                                      |                                         | SUBTITLE                                 | A3-36                            |
| Scart terminal output : RGB                                          |                                         | ANGLE                                    | A3-B5                            |
| Progressive OFF                                                      | Only for progressive models             | R_SKIP                                   | A3-9D                            |
| Progressive ON                                                       |                                         | F_SKIP                                   | A3-9C                            |
| FL indication of ID number                                           |                                         | STEREO (*1)                              | A8-4A                            |
| ZOOM ON (×4)                                                         |                                         | ZOOM                                     | A3-37                            |
| Service mode indication (error rate indication, etc.)                |                                         | CHP/TIM (*1)                             | A8-13                            |
| Model information indication                                         |                                         | CHAP (*1)                                | A8-40                            |
| Title search    Input mode IN<br>Title No. input<br>Search execution |                                         | SIDE A (*1)<br>Numbers (*1)<br>PLAY (*1) | A8-4D<br>A8-00 to A8-09<br>A8-17 |
| Region confirmation mode                                             |                                         | A.MON (*1)<br>Numbers (*1)               | A8-1E<br>A8-01 to A8-08          |

\*1 : Test mode remote control unit

#### • Service mode indication (ESC + CHP/TIM keys)

ID Address

The error rate is always displayed in exponential notation, e.g., \*. \* e - \*, for both DVDs and CDs.

EDC/ID/AV 1 error history (ID Address, EDC/ID Error, last eight errors)

#### • Calculation of the average error rate (ESC + "5" [Test mode remote control unit] keys)

The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)

For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

#### • Indication of model information (ESC + CHAP keys)

The items from 12 to 15 of the TEST MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to CHIP VERSION, and M is changed to RF VERSION. For details, see 7.1.4.

#### • Region confirmation mode (ESC + A.MON [Test mode remote control unit] + "1"- "8" [Test mode remote control unit] keys)

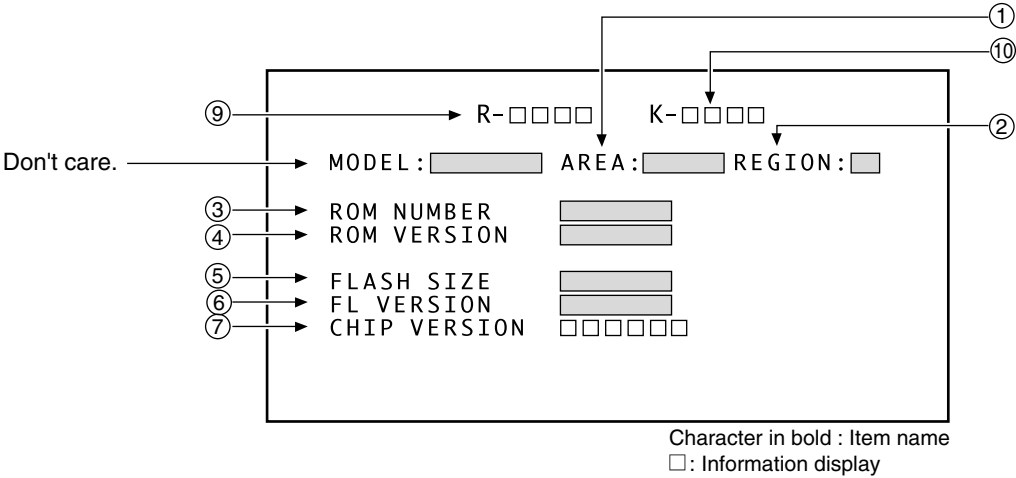
After you press the AUDIO key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

1234

## 7.1.4 SPECIFICATION OF MODEL INFORMATION DISPLAY

To display model information : Press the ESC key then the CHAP key.  
To close the model information display : Press the ESC key.

### • Display contents



- ① **Destination indication**  
Display it according to model information set from the FL controller.
- ② **Region No.**
- ③ **Part number**
- ④ **ROM version**
- ⑤ **Flash size**
- ⑥ **FL controller version**
- ⑦ **CHIP VERSION**
- ⑨ **Remote control code**
- ⑩ **Key code of Main unit**

### 7.1.5 FUNCTIONAL SPECIFICATION OF THE SERVICE MODE

- **Display during Service Mode**

To enter Service Mode, press the CHP/TIM key while holding the ESC key pressed.  
To quit, press the ESC key.

## Service mode display

- ① ID Address
- ② Error rate (always displayed), in exponential notation

ERROR RATE : \* \* \* \* \*

$$\left( \begin{array}{cccc} * & * & * & * \end{array} \right)$$

Number of error

- Calculation of the average error rate  
For DVDs: OK with  $5.0 \times 10^{-4}$  or less, for CDs: OK with  $7.6 \times 10^{-3}$  or less

ex) For DVDs

- Step 1

 $\Delta\Delta e - \square$ 

△△e -6 : OK

△△e -5 : OK

△△e -4 : Refer to Step 2

$\Delta\Delta e^{-3}$  : NG

 $\Delta\Delta e^{-2} : \text{NG}$ 

- Step 2

 $\Delta\Delta e^{-4}$ 

3.0e -4 : OK

4.0e -4 : OK

5.0e -4 : OK

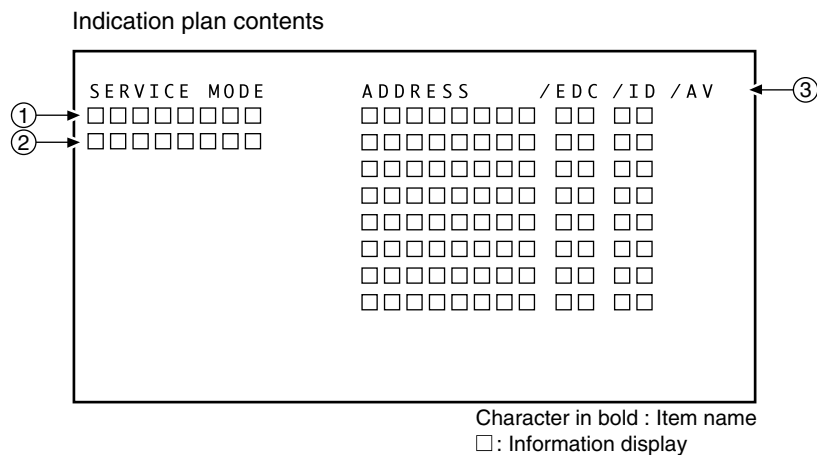
6.0e -4 : NG

7.0e -4 : NG

- ③ EDC/ID error history (ID Address, EDC/ID errors, last eight errors)

Note:

\* Error of AV1 is not supported in this player.



## 7.1.6 SERVICE TEST MODE

### 1. Specific conditions for Service Test mode

- VDET is neglected.
- XPROTECT is neglected.
- Even if the unit is urgently shut down in failure in Normal mode, you can turn it on without waiting for one minute.

### 2. How to enter Service Test mode

- While connecting STEST port (IC5501 Pin43) to "+5V", connect AC power cord.

### 3. How to quit Service Test mode, and the conditions for quitting

- To quit Service Test mode, turn the power off or disconnect the AC power cord.
- When quitting Service Test mode, only data on protection in RAM are cleared.

### 4. Indications when Service Test mode starts

- Indications on the FL display when Service Test mode starts differ depending on whether the unit was turned off normally or if the unit was urgently shut down because the abnormality of the power, as described below.

[After the power is turned off normally]

FL display WELCOME!  
↓  
FL display VOL 0  
↓  
FL display DIV SVC

[After the power is shut down because of a failure in the AMP system]

FL display PR T ER R  
↓  
FL display VOL 0  
↓  
FL display DIV SVC

[After the power is shut down because of an abnormality in the AMP system]

FL display PR T W N G  
↓  
FL display VOL 0  
↓  
FL display DIV SVC

[After the power is shut down because of a failure in the DVD system]

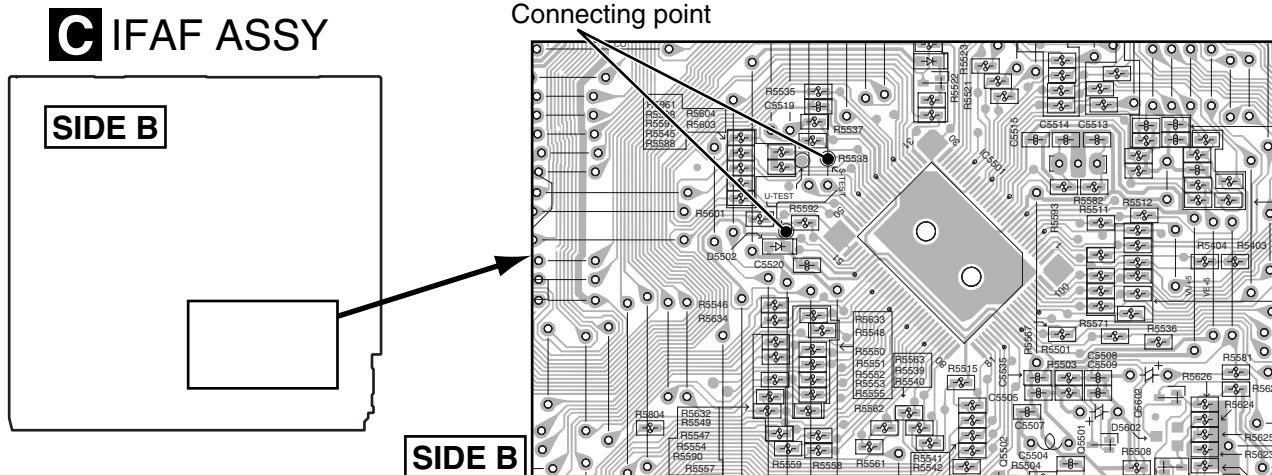
FL display DVD PR T  
↓  
FL display VOL 0  
↓  
FL display DIV SVC

### 5. Operations during Service Test mode

- Basically, operations in Service Test mode are the same as in Normal mode. However, to clarify that it is in Service Test mode, during this mode, when functions are changed, the indications on the FL display become as follows:

| [Functions] | [Indications on the FL display] |
|-------------|---------------------------------|
| DVD/CD      | DIV SVC                         |
| TUNER       | TX SVC                          |
| LINE1       | L1 SVC                          |
| TAPE        | TC SVC                          |

### Service Test mode connecting point



**Case when this diagnosis is required :**

When playback of any disc, including a test disc (DVD: GGV1025, CD: STD-905), won't play or doesn't play

**How to diagnose**

In the case mentioned above, degradation of the laser diodes (LDs) mounted on the 05SD Pickup Assy is suspected. Measure the voltage between the two ends of one of the resistors mentioned below.

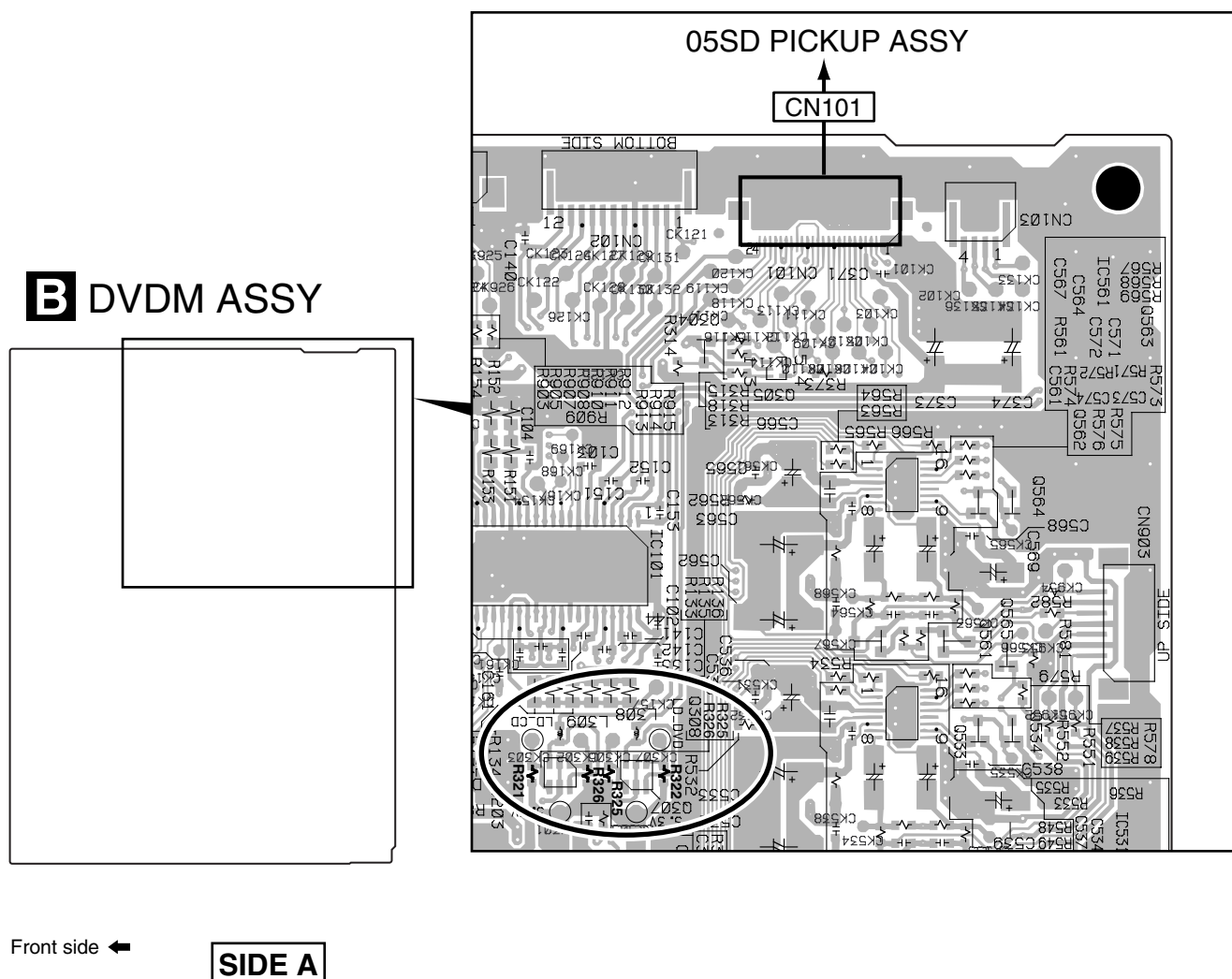
• **No playback of a DVD :**

Measure the voltage between the both ends of R322 or R325 on the DVDM Assy. If the voltage is 0.4 V or higher, the 650-nm LD is degraded.

• **No playback of a CD :**

Measure the voltage between the both ends of R321 or R326 on the DVDM Assy. If the voltage is 0.4 V or higher, the 780-nm LD is degraded.

If the measurements show degradation of an LD, replace the 05SD Pickup Assy.



## 7.1.8 DVD TROUBLE SHOOTING

| No. | Symptoms                                                                                                | Diagnosis Contents                                                                                                                                                                                                                                                                                                                                                                                 | Possible Defective Points                                                |
|-----|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1   | The power is not turned on.                                                                             | Are wires of output connector (POWER SUPPLY Unit) and CN901 (DVDM Assy) disconnected or damaged ?                                                                                                                                                                                                                                                                                                  | Connector / cable                                                        |
|     |                                                                                                         | Check that the following voltage is output :<br>+ side of C739 : 3.3V                                                                                                                                                                                                                                                                                                                              | <b>DVDM Assy</b><br>3.3V Regulator IC (IC341)                            |
| 2   | An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.) | Are the signals output from IC201-pin 98 (MDATA) and pin 99 (SCLK) on the DVDM Assy ? (in the range of 0-3V)                                                                                                                                                                                                                                                                                       | <b>DVDM Assy</b><br>DVD IC (IC201)                                       |
|     |                                                                                                         | Are the signals input into IC5501-pin 50 (MDATA) and pin 51 (SCLK) on the IFAF Assy ? (in the range of 0-3V)                                                                                                                                                                                                                                                                                       | <b>IFAF Assy</b><br>UCOM (IC5501)                                        |
|     |                                                                                                         | Check that the following voltage are output :<br>IC751-pin 1 on the DVDM Assy : 5V                                                                                                                                                                                                                                                                                                                 | <b>DVDM Assy</b><br>5V Regulator IC (IC751)                              |
|     |                                                                                                         | Is a resonator (X201: 27MHz) on the DVDM Assy oscillating ?                                                                                                                                                                                                                                                                                                                                        | <b>DVDM Assy</b><br>Crystal resonator (X201)<br>DVD IC (IC201)           |
|     |                                                                                                         | <ul style="list-style-type: none"> <li>Is a signal input into IC203-pin26 (PCE#) on the DVDM Assy ? (Is a signal "H" for 80 mS and then "L" after the power is turned on ?)<br/>→ Communication with flash ROM.</li> <li>Are the signals input into IC202-pin 16 (DWE#), pin 19 (DCS#) and pin 38 (SDCLK) on the DVDM Assy ? (Is a signal fluctuating ?)<br/>→ Communication with SDRAM</li> </ul> | <b>DVDM Assy</b><br>DVD IC (IC201)<br>Flash ROM (IC203)<br>SDRAM (IC202) |
|     |                                                                                                         | Is a signal output from IC203-pin 28 (PRD#) on the DVDM Assy? (Is a signal fluctuating for several hundred mS after the power is turned on ?)                                                                                                                                                                                                                                                      | <b>DVDM Assy</b><br>Flash ROM (IC203)                                    |
|     |                                                                                                         | Is a signal input into IC5501-pin 67 (DVD ACK) on the CONTROL Assy ? (Is a signal fluctuating ?)<br>→ Communication with FL Control IC                                                                                                                                                                                                                                                             | <b>DVDM Assy</b><br>DVD IC (IC201)<br><b>IFAF Assy</b><br>UCOM (IC5501)  |
|     |                                                                                                         | Is a signal output from IC5501-pin 30 (XREADY) on the CONTROL Assy ? (Is a signal fluctuating in the range of 0-5V ?)                                                                                                                                                                                                                                                                              | <b>IFAF Assy</b><br>UCOM (IC5501)                                        |
|     |                                                                                                         | Are the signals output from IC5501-pin 49 (SDATA) on the CONTROL Assy ? (in the range of 0-5V)                                                                                                                                                                                                                                                                                                     | <b>DVDM Assy</b><br>DVD IC (IC201)<br><b>IFAF Assy</b><br>UCOM (IC5501)  |
|     |                                                                                                         | Are the signals of IC204-pin 5(SDA) and pin 6(SCL) on the DVDM Assy fluctuating for one or two seconds after the power is turned ?                                                                                                                                                                                                                                                                 | <b>DVDM Assy</b><br>EEPROM (IC204)                                       |
| 3   | An opening screen is not displayed on the monitor (The FL display lights. The mechanism works.)         | Check the video signal path between DVD IC (DVDM Assy IC201) and video-out terminal (see the block diagram)                                                                                                                                                                                                                                                                                        | <b>DVDM Assy</b><br>Video circuit after DVD IC (IC201)                   |

| No. | Symptoms                                                                    | Diagnosis Contents                                                                                                                                                                                                                             | Possible Defective Points                                         |
|-----|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 4   | A tray cannot be opened.<br>(An opening screen is displayed on the monitor) | Does the voltage of CN104-pin 3 and pin 5 on the DVDM Assy change normally ?<br>Pin 3 (SW2(TRIN)): Tray is fully closed: "L"<br>Pin 5 (SW1(TROUT)): Tray is fully opened: "L"                                                                  | <b>LOAB Assy</b><br>Tray SW (S101)                                |
|     |                                                                             | Is the signal input into IC101-pin 11 (TROPEN) on the DVDM Assy ?<br>At open: 3.3V, At close: 0V                                                                                                                                               | <b>DVDM Assy</b><br>DVD IC (IC201)                                |
|     |                                                                             | Are the signals output from IC101-pin 1 and pin 2 (CN103-pin 1 and pin 2) on the DVDM Assy ?<br>Pin 2: Approx. 6V during opening tray approx. 0V during closing tray.<br>Pin 1: Approx. 0V during opening tray approx. 6V during closing tray. | <b>DVDM Assy</b><br>FTS Driver IC (IC101)                         |
|     |                                                                             | Are wires of CN104 and CN103 on the DVDM Assy disconnected or damaged ?                                                                                                                                                                        | Connector / cable                                                 |
|     |                                                                             | Does the voltage of CN102-pin 1 on the DVDM Assy change to 0V by pressing the Inside switch.                                                                                                                                                   | Inside switch                                                     |
| 5   | Playback impossible<br>(no focusing)                                        | Are the signals output from IC101-pin 3 (FOCS_DRV) and pin 4 (FOCS_RTN) on the DVDM Assy ?                                                                                                                                                     | <b>DVDM Assy</b><br>FTS Driver IC (IC101)                         |
|     |                                                                             | Does 650-nm LD emit light ?<br>Does a pickup lens move up / down ?<br>Does an actuator spring bend ?                                                                                                                                           | Pickup                                                            |
|     |                                                                             | Are plastic parts damaged ? Or is a shaft detached ?<br>Is the turntable detached or tilted ?                                                                                                                                                  | Mechanism section (motor)                                         |
|     |                                                                             | Is flexible cable of CN101 on the DVDM Assy disconnected or damaged ?                                                                                                                                                                          | Flexible cable / connector                                        |
|     |                                                                             | Is signal output from IC201-pin 42 (FOSO) on the DVDM Assy ?<br>(Device control of about 1.4 V is output usually. It is fluctuated by about $\pm 250$ mV with focus up / down.)                                                                | <b>DVDM Assy</b><br>DVD IC (IC201)                                |
| 6   | Playback impossible<br>(Spindle does not turn)                              | Are the signals output from IC101-pin 30 (W), pin 33 (V) and pin 35 (U) on the DVDM Assy ?<br>Is pin 26 (STBY) fixed LOW ? (pin 26 is High at playback: 3V)                                                                                    | <b>DVDM Assy</b><br>FTS Driver IC (IC101)                         |
|     |                                                                             | Is there any part detached from the spindle motor ?<br>Or Is there any foreign object lodged in it ?                                                                                                                                           | Mechanism section<br>(Spindle motor)                              |
|     |                                                                             | Are wires of CN102 on the DVDM Assy disconnected or damaged ?                                                                                                                                                                                  | Flexible cable / connector                                        |
|     |                                                                             | Is signal output from IC201-pin 37 (DMSO) on the DVDM Assy ?                                                                                                                                                                                   | <b>DVDM Assy</b><br>DVD IC (IC201)                                |
| 7   | Playback impossible<br>(Playback stops)                                     | Does 650-nm LD deteriorate ?<br>If the voltage at each both ends of R322 and R325 on the DVDM Assy is 0.4 V or more, the 650-nm LD is definitely deteriorated.                                                                                 | 650-nm LD deteriorated.<br>(When playback of a DVD is impossible) |
|     |                                                                             | Does 780-nm LD deteriorate ?<br>If the voltage at each both ends of R321 and R326 on the DVDM Assy is 0.4 V or more, the 780-nm LD is definitely deteriorated.                                                                                 | 780-nm LD deteriorated.<br>(When playback of a CD is impossible)  |
|     |                                                                             | Is there abnormality in FG waveform ? (IC201-pin 47)                                                                                                                                                                                           | <b>DVDM Assy</b><br>FG output : FTS Driver IC (IC101)             |
|     |                                                                             | Are there scratches or dirt on the disc ?                                                                                                                                                                                                      | Disc                                                              |
| 8   | Picture disturbance during playback<br>(block noise, freeze, other)         | Are there scratches or dirt on the disc ?<br>Is there a problem with the format of the disc ?                                                                                                                                                  | Disc                                                              |
|     |                                                                             | Check the video signals.<br>Composite video signal (IC401-pin 25)<br>S video signal (IC401-pin 21, pin 26)<br>RGB video signal (IC401-pin 16, pin 18, pin 20)                                                                                  | <b>DVDM Assy</b><br>DVD IC (IC201)<br>Video IC (IC401, IC451)     |
| 9   | No sound<br>(Picture is normal)                                             | Check the waveform (SPDIF: CN901-pin 16).                                                                                                                                                                                                      | <b>DVDM Assy</b><br>DVD IC (IC201)                                |

● Symptoms that may occur when any of the following ICs is in failure

A

| IC                                      | Symptoms                                                                                                                                                                  |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EEP ROM</b><br>(DVDM Assy : IC204)   | User's data cannot be stored in memory.<br>The ID number is lost.                                                                                                         |
| <b>Flash ROM</b><br>(DVDM Assy : IC203) | The power cannot be turned on.<br>Downloading of the firmware cannot be performed.                                                                                        |
| <b>DVD IC</b><br>(DVDM Assy : IC201)    | Any kind of symptoms (no power, a failure in any of the servo, video and audio systems, etc.) may be generated, because the DVD processing is performed by a single chip. |
| <b>64M SDRAM</b><br>(DVDM Assy : IC202) | No power.<br>Block noise is generated during playback.                                                                                                                    |

B

C

D

E

F

**Caution:**

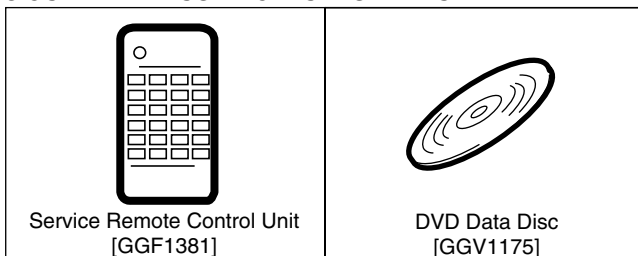
For the DVD players compatible with DVD-RW, for playback of a DVD-RW disc (CPRM), it is necessary that an individual ID number and ID data are set for each player. If the ID number and ID data be not properly set in the manner described below, future operations cannot be guaranteed. The ID number is written on the yellow label at the rear panel of the player.  
**If there is no yellow label, before downloading FLASH ROM, take note of the ID number set following the procedures outlined in "ID Number Confirmation Mode" on the next page.**

**Note:** Enter ID numbers while the unit is in Stop mode so that the values set will be immediately written to the flash ROM.

**Setting an ID number or ID data is required in the following case:**

If NoIDNum! or NOIDDATA is displayed on the FL display immediately after the power to the player is turned on or during Stop mode.

**JIGS AND MEASURING INSTRUMENTS**

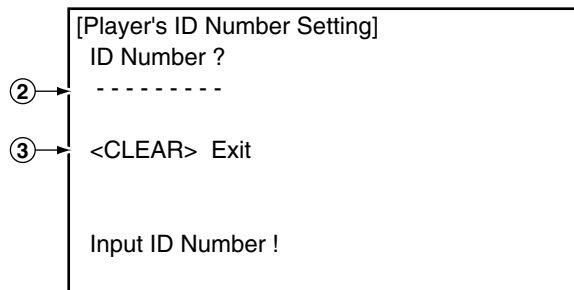


**ID Number Input Mode**

- ① To enter ID Number Input Mode, with no ID number set, such as in a case of immediately after upgrading the firmware, press the ESC key then the STEREO key.

**Note:** If a previous ID number and ID data, such as a factory-preset ID number and ID data, are maintained, the unit enters ID Number Confirmation Mode when the above keys are pressed. However, if only an ID number is maintained, the unit enters ID Data Input Mode.

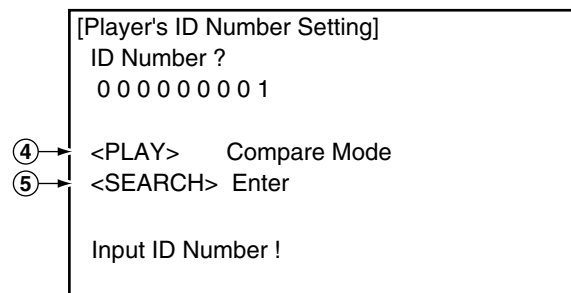
- ② Enter a 9-digit ID number. The ID number is also displayed on the FL display.
- ③ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.



- ④ After entering all 9 digits, if you press the PLAY key, the unit enters Compare mode. Enter the same ID number again. Only if your two input numbers match, the ID number is set. Compare mode helps eliminate mistyping of the ID number.

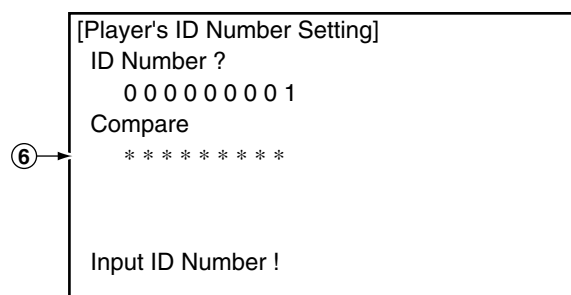
**Note:** If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ② without doing anything else.

- ⑤ After entering all 9 digits, if you press the SEARCH key, the unit unconditionally sets the input number as the ID number. Then the unit automatically enters Player's Data Input Mode. (The SEARCH key is not accepted after all 9 digits have been entered.)



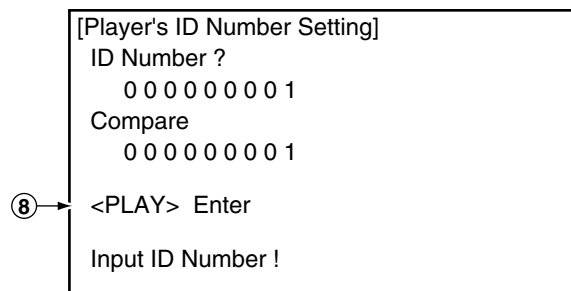
- ⑥ This display appears when the PLAY key is pressed in Step 4. Enter a 9-digit number to compare. The number is also displayed on the FL display.

- ⑦ By pressing the CLEAR key without having input a number, the unit returns to Step ② without doing anything else. Each press of this key after a number has been input deletes one digit.



- ⑧ After entering all 9 digits, if you press the PLAY key, the unit compares the numbers input in Steps ② and ⑥, and only if the numbers match, that number is set as the ID. Then the unit automatically enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Input Mode.

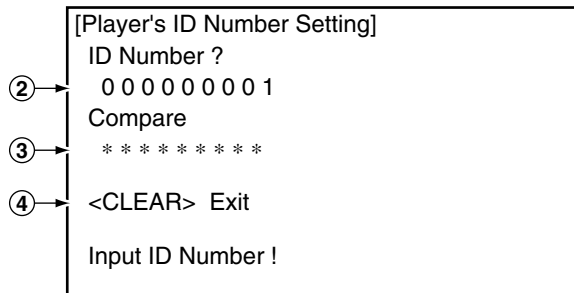
**Note:** If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ⑥ without doing anything else.



## ID Number Confirmation Mode

- A
- ① To enter ID Number Confirmation Mode after the ID number and the ID data are set, press the ESC key then the STEREO key.
  - ② The ID number already set is displayed.  
(It is also displayed on the FL display.)
  - ③ Enter a 9-digit number for comparison. This is not required when you only wish to check the ID number visually.  
(The number is also displayed on the FL display.)
  - ④ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.

B



C

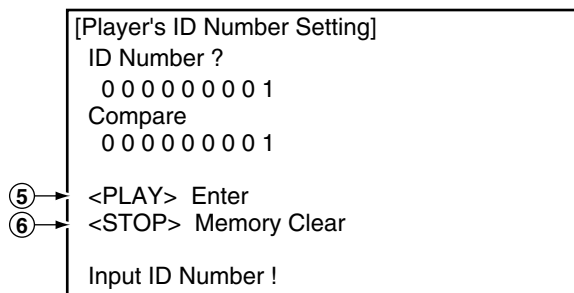
- ⑤ After entering all 9 digits, if you press the PLAY key, the unit compares the number entered in Step ② with the ID number set, and only if the numbers match, the unit automatically exits ID Number Confirmation Mode. If an ID data has not been entered, the unit enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Confirmation Mode.

**Note:** If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ④ without doing anything else.

D

- ⑥ After entering all 9 digits, if you press the STOP key, the unit compares the number entered in Step ③ with the ID number set, and only if the numbers match, the unit automatically deletes the ID number and exits this mode. If the numbers do not match, the disc tray is opened, and the unit exits this mode. (The STOP key is not accepted after all 9 digits have been entered.)

E



F

### • Indication of an ID number already set

An ID number already set is displayed in the following cases:

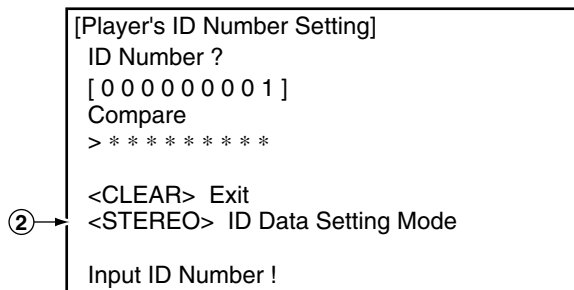
- 1) When the ESC key then the CLEAR key are pressed, user settings are cleared, then the ID number set is displayed on the screen. In this case, the ID number is not displayed on the FL display.
- 2) When the unit enters ID Number Confirmation Mode by your pressing the ESC key then the CLEAR key, the ID number set is displayed. In this case, the ID number is also displayed on the FL display.  
If you only need to confirm the ID number, you can exit this mode by pressing the CLEAR key or turning off the power.

### • Indication when no ID number is set

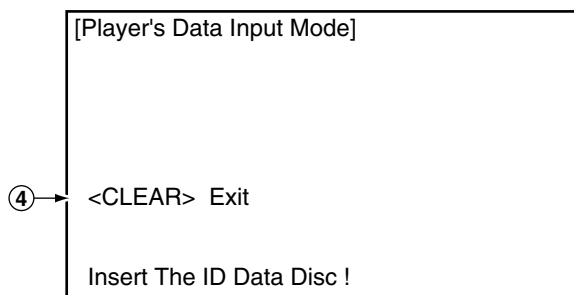
If no ID number is set, the message "No ID Num!" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

## ID DATA Input Mode

- ① To enter ID DATA Input Mode, with the ID number set, press the ESC key then the STEREO key.
- ② When the STEREO key is pressed, the unit enters ID DATA Input Mode.

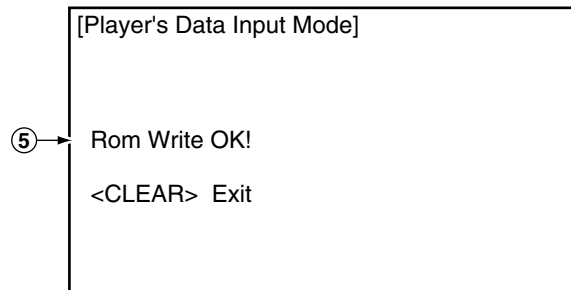


- ③ If the DVD DATA DISC is loaded in this mode, the unit automatically starts reading the data.  
(If the DVD DATA DISC has already been loaded, the unit does not start reading the data. In this case, open then close the tray.)
- ④ To exit this mode, press the CLEAR key. While data are being read from the DVD DATA DISC, you cannot exit this mode.

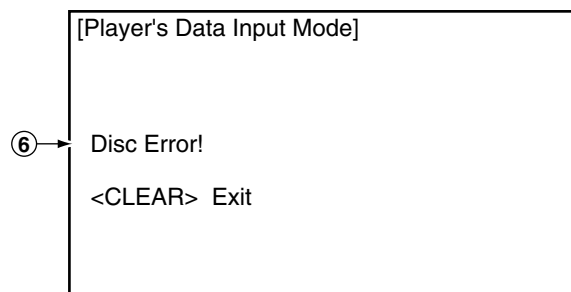


- ⑤ When writing of the data read from the disc to flash ROM is completed, "Rom Write OK!" is displayed. After seeing this message, you can exit this mode by pressing the CLEAR key.

**Note:** Whether or not the data have been written to flash ROM can be confirmed by watching for the message "Rom Write OK!" being displayed after the disc is read.



- ⑥ If the data cannot be read from the disc, "Disc Error!" is displayed on the screen, and the disc is ejected.



### • Indication when the data have not been set

If no ID data are set after the ID number is changed, the message "NO ID DATA" displays on FL display after the power is turned on or during Stop mode.

## 7.1.10 DISASSEMBLY

**Note 1:** Do NOT look directly into the pickup lens. The laser beam may cause eye injury.

**Note 2:** Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

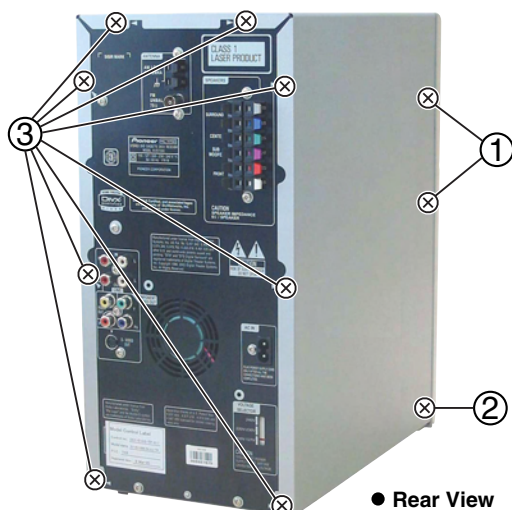
**Note 3:** For performing the diagnosis shown below, the following jigs for service is required:

- Flexible cable for service (GGD1309)
- Cable for service (GGD1425)

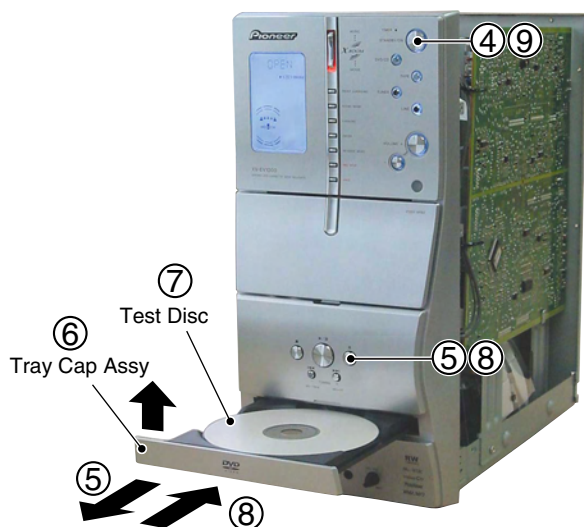
### Diagnosis of PCB's

#### 1 Bonnet and Tray panel

- ① Remove 4 screws from Bonnet L and R (BPZ30P080FNI).
- ② Remove 2 screws from Bonnet L and R (BBZ30P080FNI).
- ③ Remove the Bonnet by removing the 8 screws (BBZ30P080FNI).



- ④ Press the  $\odot$  STANDBY/ON button to turn on the power.
- ⑤ Press the  $\blacktriangle$  OPEN/CLOSE button to open the Tray.
- ⑥ Remove the Tray Cap Assy.
- ⑦ Set the Test Disc.

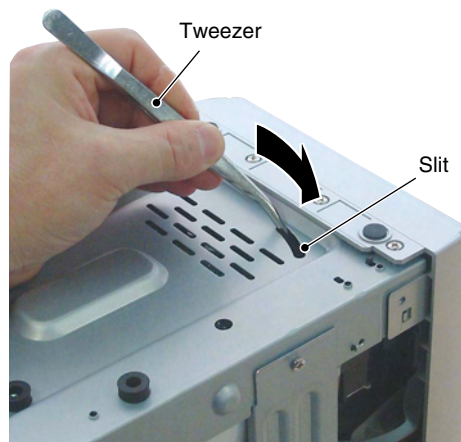


- ⑧ Press the  $\blacktriangle$  OPEN/CLOSE button to close the Tray.  
(Test disc is clamped.)
- ⑨ Press the  $\odot$  STANDBY/ON button to turn off the power.
- ⑩ Pull out the Power cord.

#### ● How to open the tray when the power cannot be on

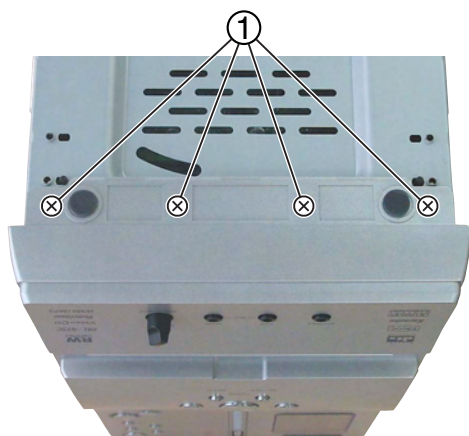
Insert a Tweezer(as shown in the photo) into the slit located at the bottom of the unit and slide the projection of the Drive Cam in the Loader Assy in the direction of the arrow, as indicated in the photo.

If the tray pops out a little, fully pull it out by hand.



## 2 Front Panel and Amplifier Assy

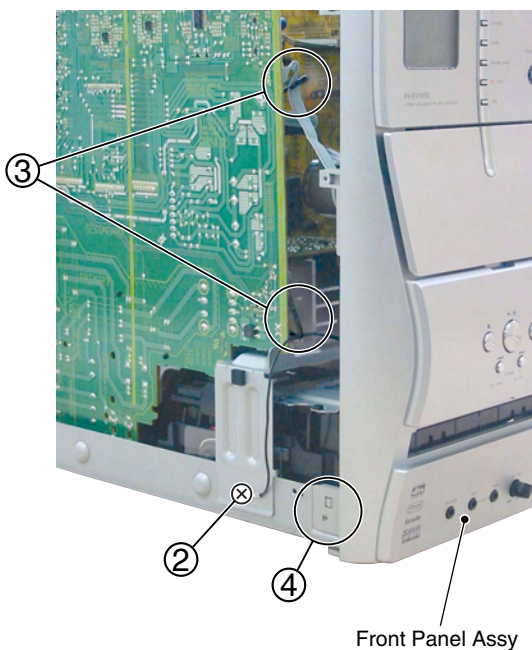
- ① Remove 4 screws at bottom side of the unit.



● Bottom View



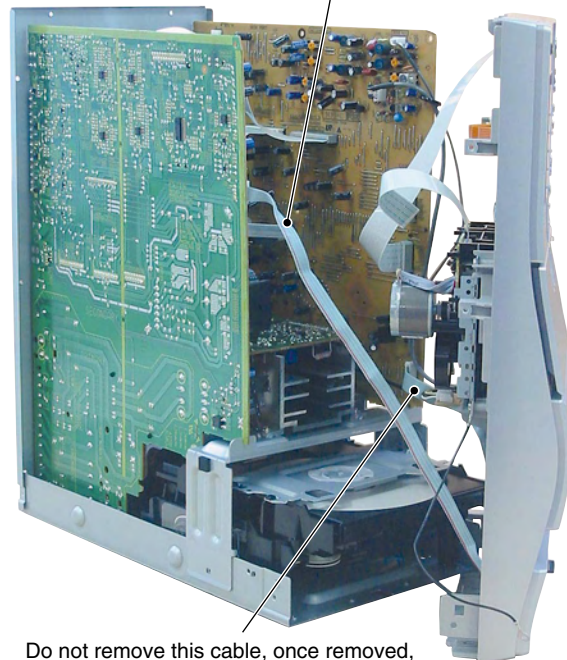
- ② Remove the grounding screw.  
 ③ Unhook the 2 cable hooks.  
 ④ Released the hook at the right and left side of the Front Panel Assy.



Front Panel Assy

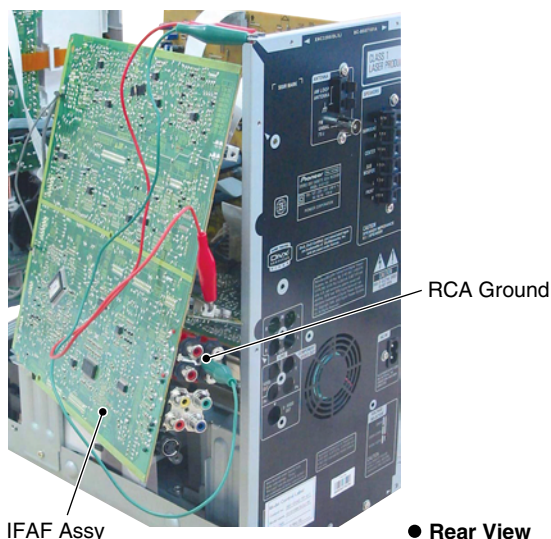


Do not remove this cable, once removed, there is no amplify output signal, you need to use the headphone to hear the output signal.



Do not remove this cable, once removed, the display will indicate "Mic in" and you cannot select 5.1 channel output signal, only 2 channel signals will be output. Not affected for model with 2 channel output. (But display will also indicate "Mic in")

- ⑤ In the event that Power Amplifier Assy was removed and repaired(IFAF Assy had been removed)  
 If you want to power on the set with IFAF Assy removed from the Rear Panel, make sure the RCA ground is connected to the Rear Panel as shown in the attached photo.

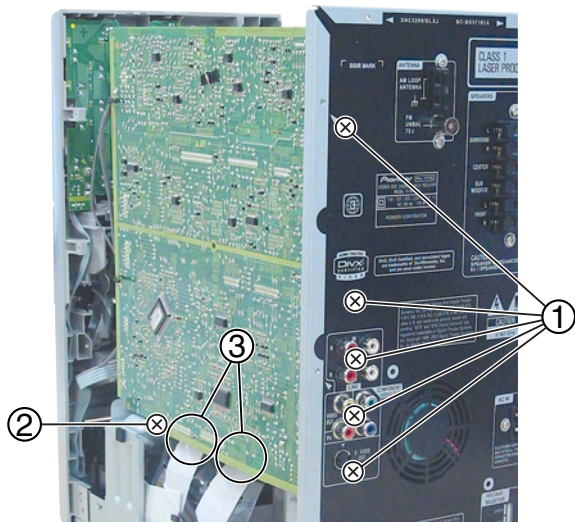


● Rear View



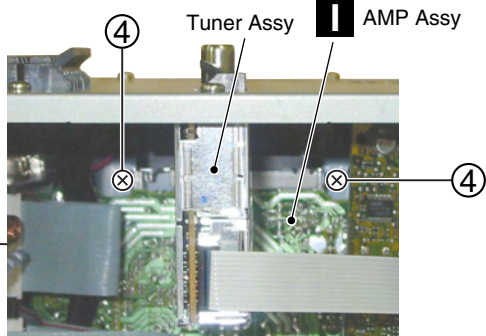
### 3 Disassembly of Power Amplifier Module

- ① Remove 5 screws at the Rear Panel of the unit.
- ② Remove 1 screw on the IFAF Assy Bracket.
- ③ Disconnect the FFC Cables at CN5102 and CN8301.

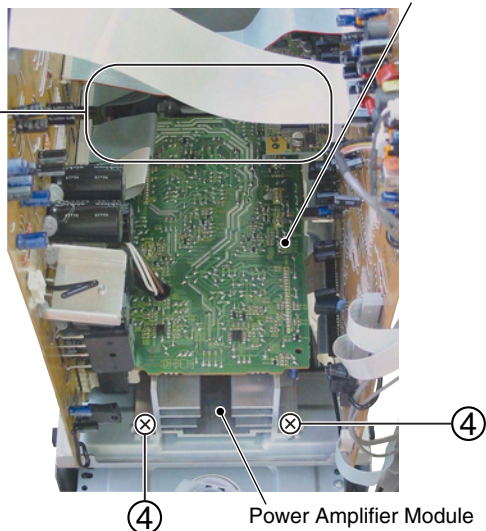


● Rear View

- ④ Remove 4 screws on the Power Amplifier Module.

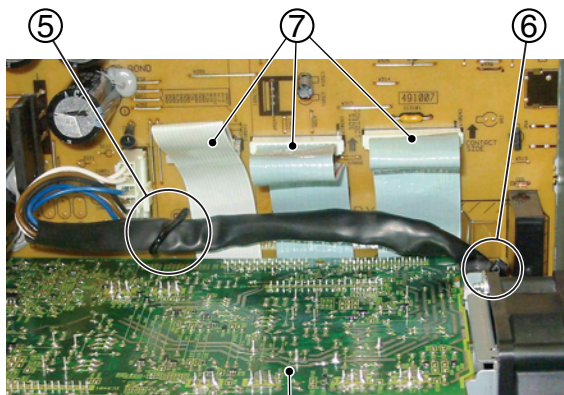


Power Amplifier Assy



Power Amplifier Module

- ⑤ Remove the cable hook.
- ⑥ Remove the binder.
- ⑦ Remove the cables on CN3011, CN3012 and CN3013



AMP Assy

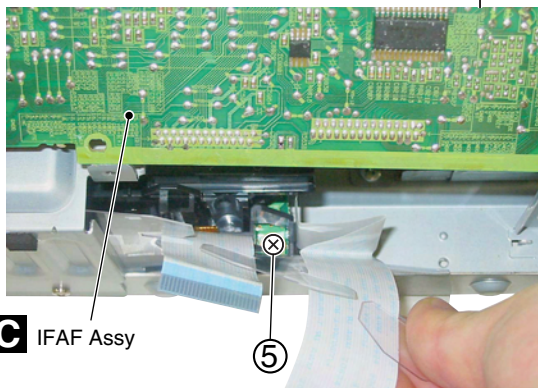
- ⑧ Lift up the IFAF Assy as shown in the photo above to remove the Power Amplifier Module.

#### 4 DVD Main Board diagnosis

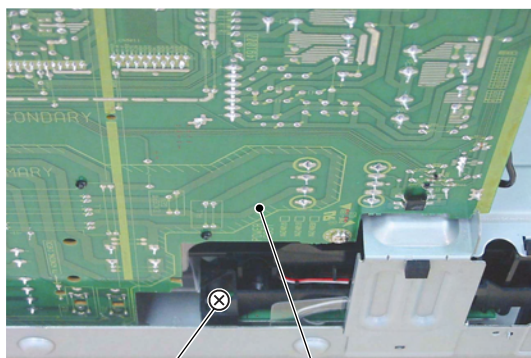
- ① Remove the Top Bonnet.
- ② Power on the unit, open the Tray and remove the Tray Cap.
- ③ Load in a DVD test disc and power off the unit.
- ④ Remove the IFAF Assy as in section 3 steps 1 to 3.



- ⑤ Remove 2 screws from the DVD Module.

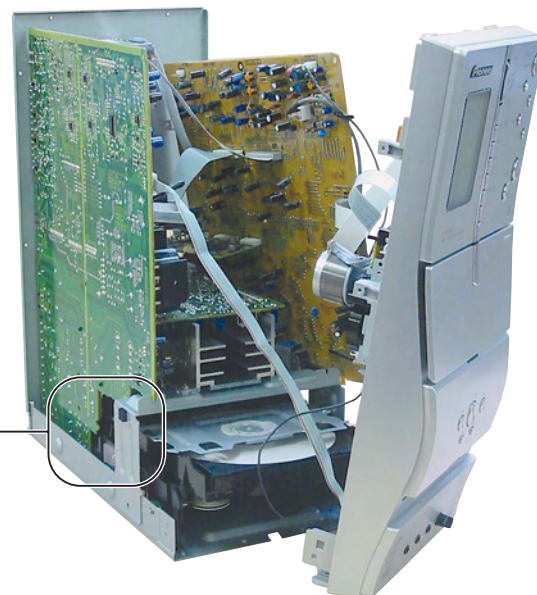


**C** IFAF Assy



**J** POWER Assy

- ⑥ Follow the procedure in section 2 (Steps 1 to 5) and remove the Front Panel Assy as shown in the photo.

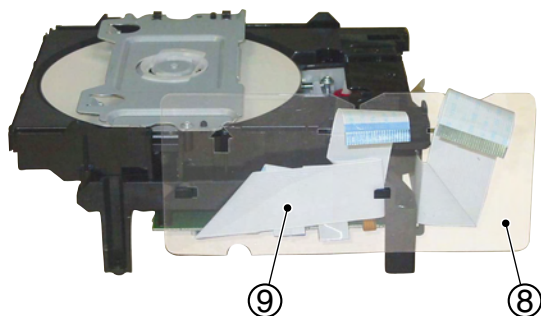


- ⑦ Carefully remove the DVD Module by lifting the Front Panel Assy upward.

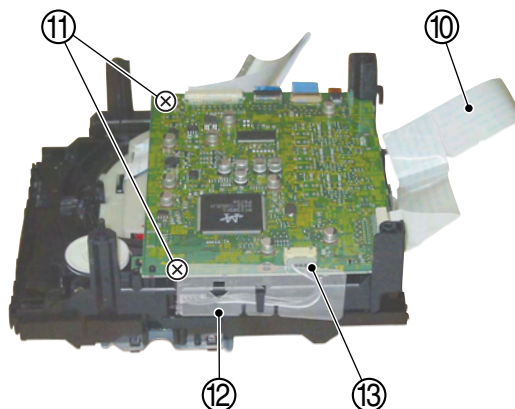


**Caution :** Be careful not to damaged the 2 DVD FFC Cable

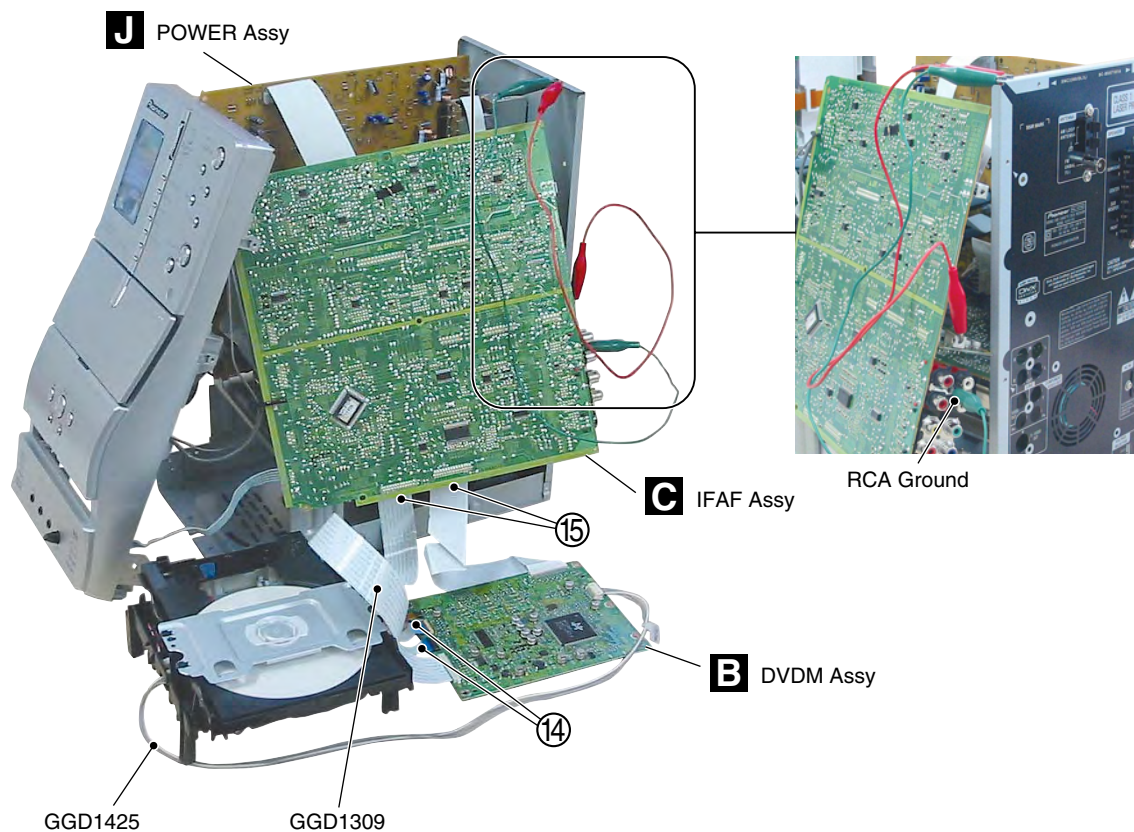
- ⑧ Remove the DVD FFC Plastic Holder as shown in the photo below.
- ⑨ Remove the FFC Cable and replaced it with GGD1309.



- ⑩ Remove the FFC Cable from the hooks.
- ⑪ Remove 2 screws.
- ⑫ Remove Plastic Holder and unhook the cable.
- ⑬ Remove cables and replaced it with GGD1425.



- ⑭ Flip the DVD PCB and unhook the 2 flexible as shown in the photo.
- ⑮ Connect both FFC Cables onto IFAF Assy CN5102 (use GGD1309) and CN8301 (use back original cable). Flip the DVD Main Board as shown in the photo. Also ensure that the RCA ground is connected to the Rear Panel.

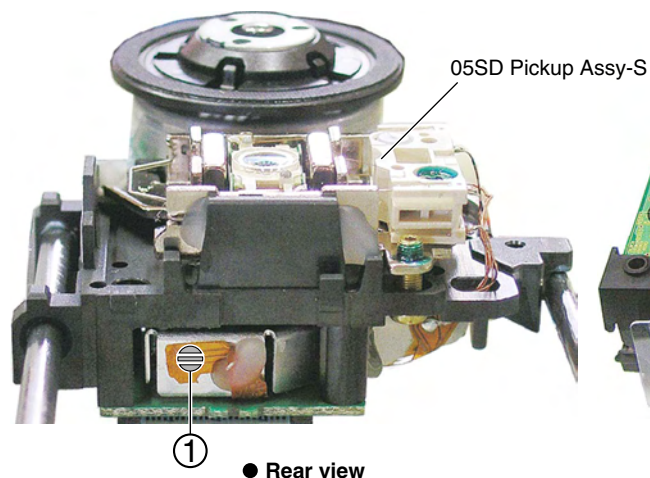


## Removing the Traverse Mechanism Assy-S and 05SD Pickup Assy-S

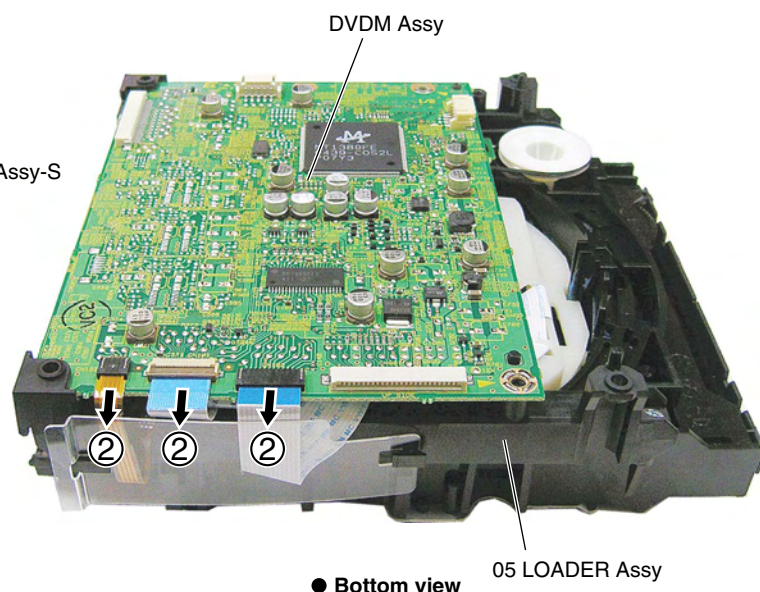
### 1 05 LOADER Assy

- ① Short-circuit point by soldering.

**Note:** After replacement, connect the flexible cable for pickup, then remove the soldered joint (open).

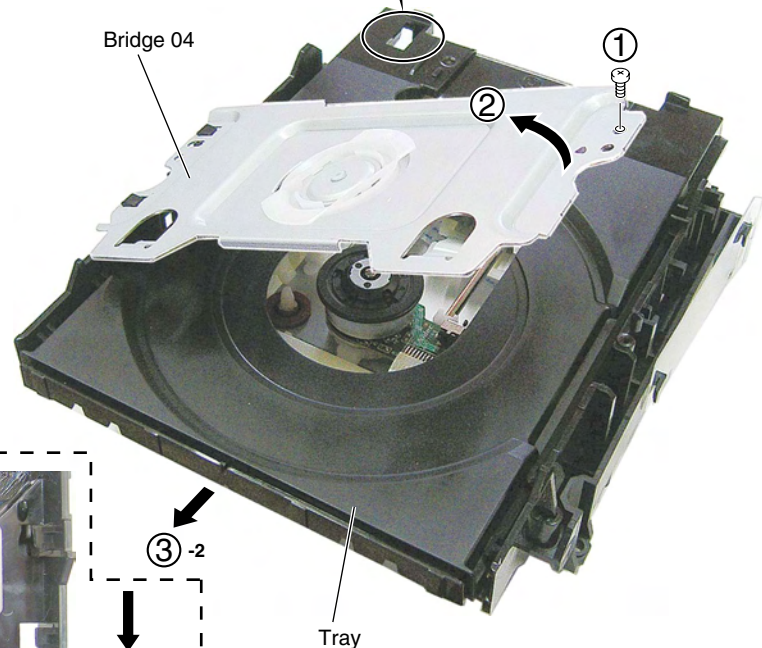
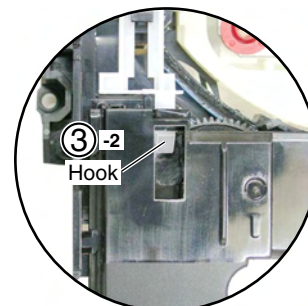


- ② Disconnect the three flexible cables.



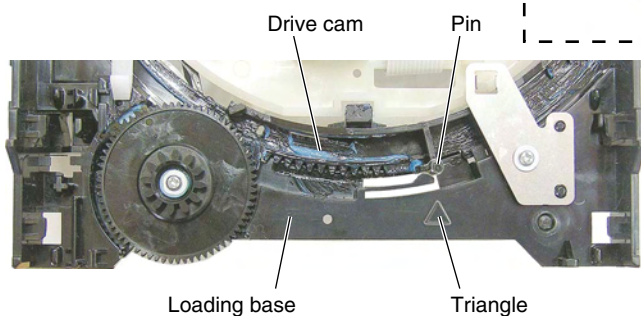
### 2 Bridge 04, Tray

- ① Remove the one screw.  
 ② Remove the bridge 04.  
 ③ Pull out the tray, then remove it by pressing the hook.



#### Note when reinserting the tray

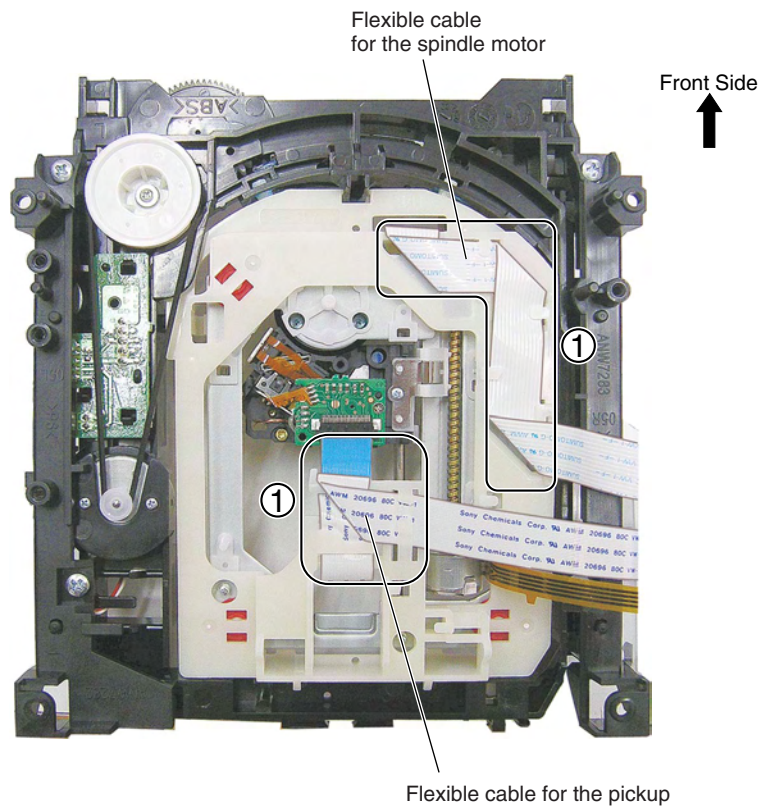
When reinserting the tray, first align the triangle printed on the loading base and the pin of the drive cam, then insert the tray.



③-2  
 Front side

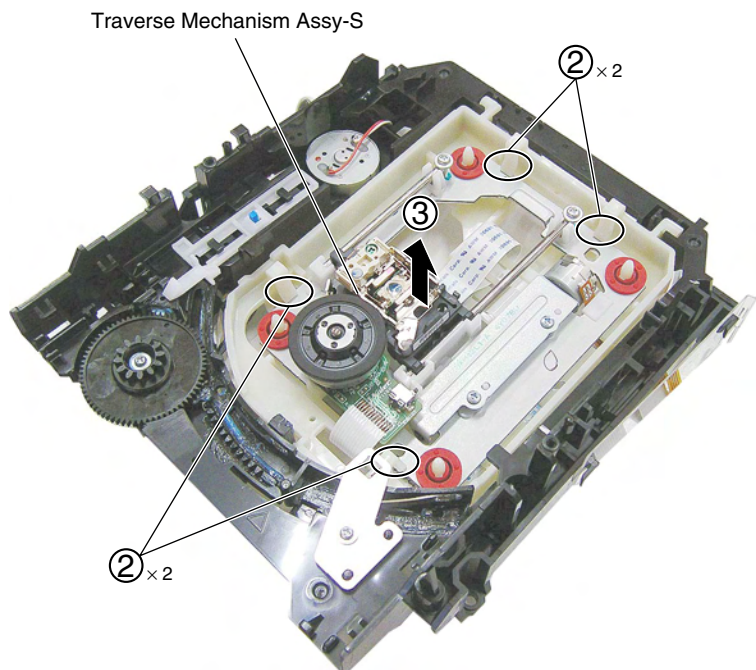
### 3 Traverse Mechanism Assy-S

- A ① Dislodge the two flexible cables from their factory placement.



● Bottom view

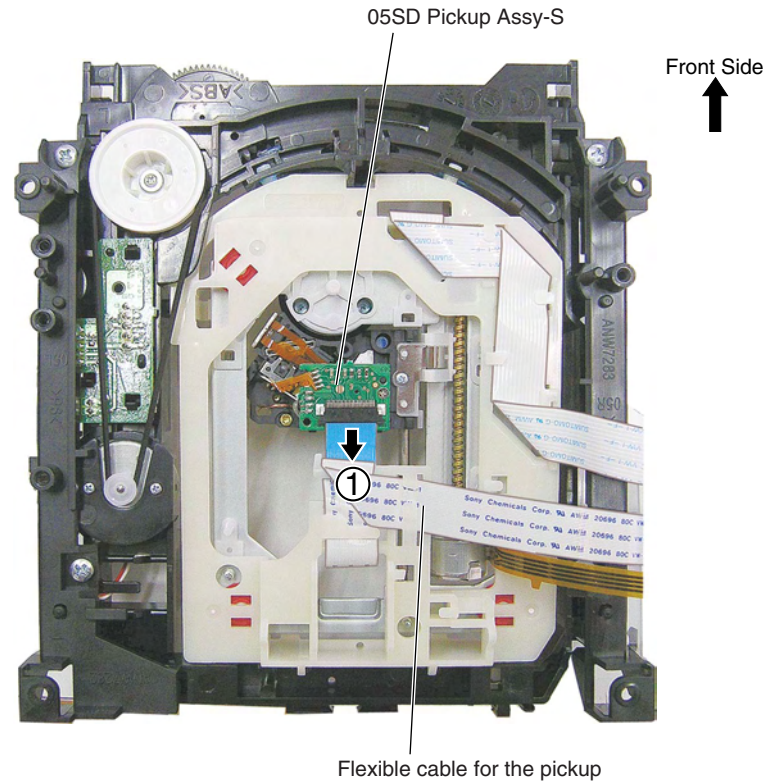
- D ② Unhook the four hooks.  
 ③ Remove the Traverse Mechanism Assy-S



#### 4 05SD Pickup Assy-S

Note: The 05SD Pickup Assy can be removed without removing the TTraverse Mechanism Assy-S.(shown as Step 3.)

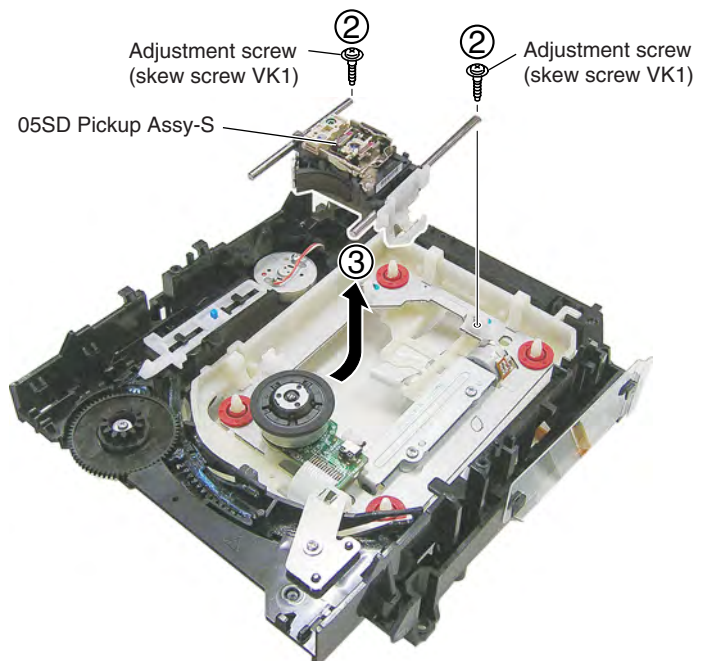
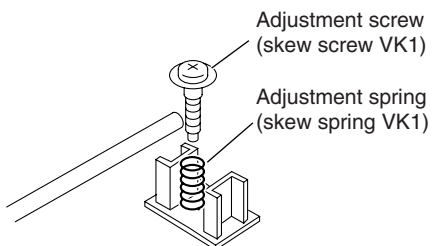
- ① Disconnect the flexible cable for the pickup.



● Bottom view

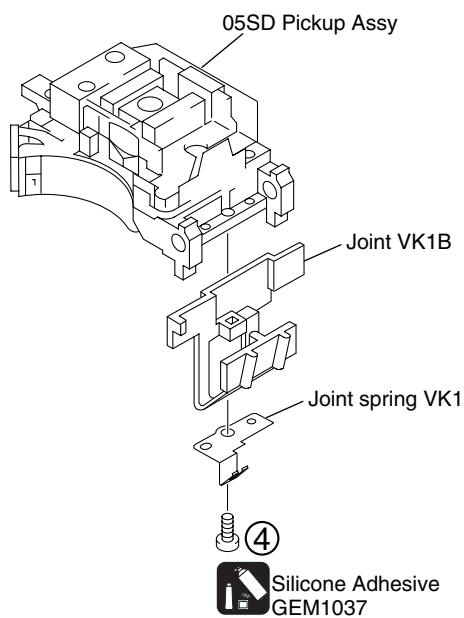
- ② Remove the two adjustment screws.
- ③ Remove the 05SD Pickup Assy.

Note: Be careful not to lose the adjustment spring (skew spring VK1).



④ Remove the one screw.

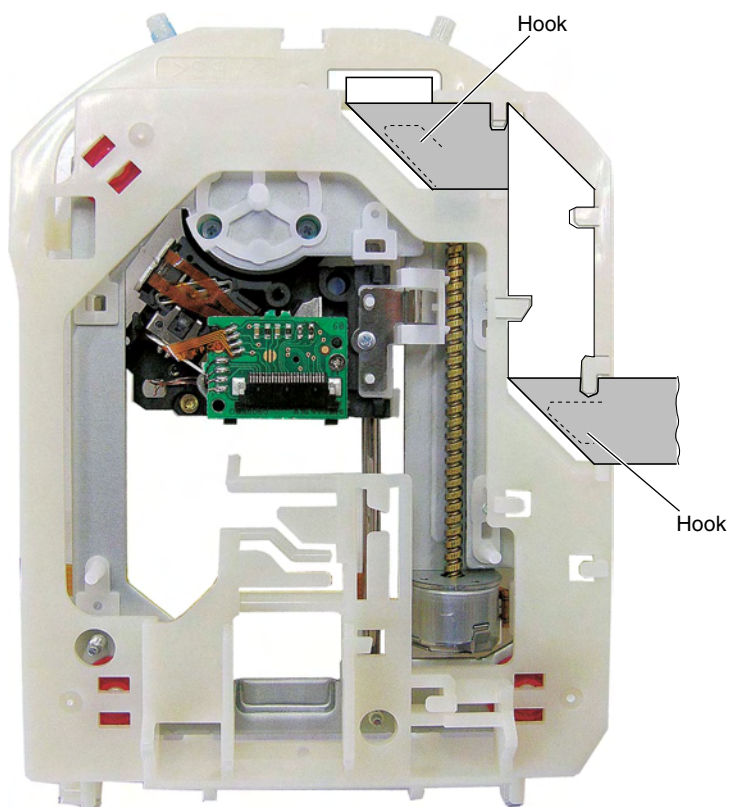
**Note:** The screw is secured with the silicone adhesive.  
Make sure to apply the silicone adhesive after reattaching the screw.



### Arrangement of the flexible cable for the spindle motor

■ : Conductive surface

Front Side  
↑



● Bottom view

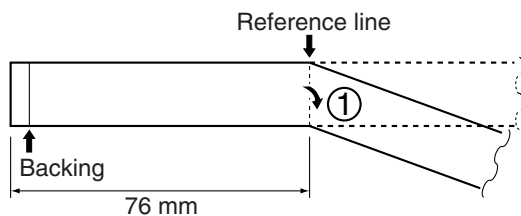
## Arrangement of the flexible cable for the pickup

 : Conductive surface

### Note:

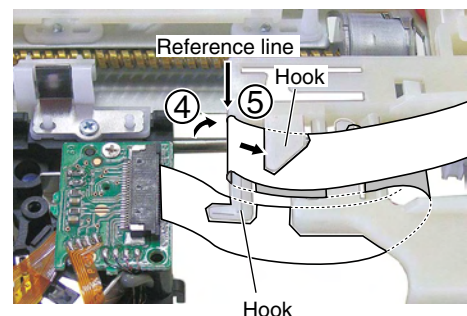
Be sure to move the 05SD Pickup Assy to the innermost perimeter.

- ① Fold the flexible cable for the pickup with the backing outward in the illustration below.

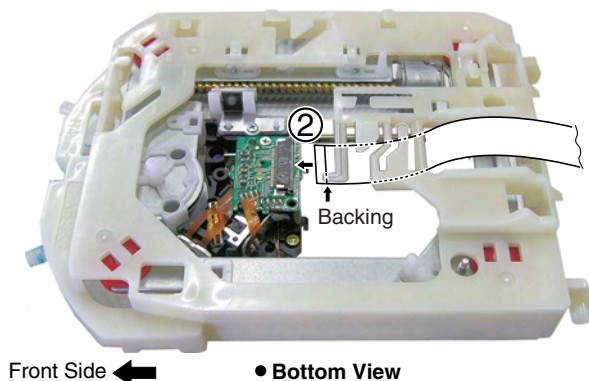


- ④ Hook the part folded in Step ① to the hook.

- ⑤ Pass the flexible cable through the hook.

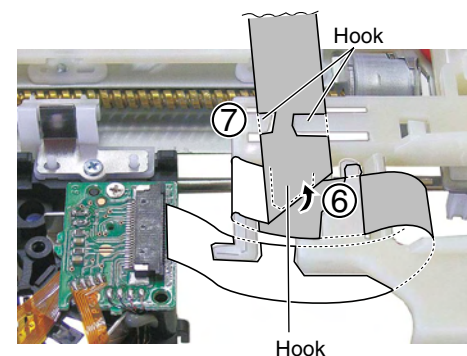


- ② Attach the flexible cable for the pickup to the connector.

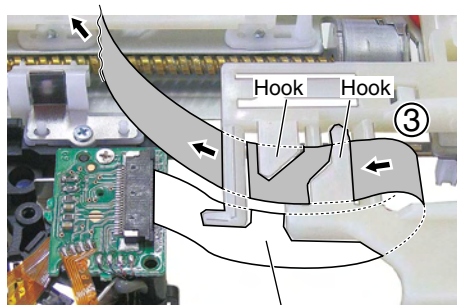


- ⑥ Fold the flexible cable along the hook.

- ⑦ Pass the flexible cable through the hook.



- ③ Pass the flexible cable through the hook.



Make sure that the cable is loose

## 7.2 PARTS

### 7.2.1 IC

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

#### • List of IC

PDC126A

#### ■ PDC126A (IFAF ASSY : IC5501)

- System Control Microcomputer

#### ● Pin Functions

| No. | Pin Name   | I/O | Pin Function                                                            |
|-----|------------|-----|-------------------------------------------------------------------------|
| 1   | DVDON/OFF  | O   | Control power supply for DVD module                                     |
| 2   | HPDET      | I   | Detect to insert headphone                                              |
| 3   | NC         | O   |                                                                         |
| 4   | ACPULSE    | I   | AC PULSE input detection (Interruption 0)                               |
| 5   | NC         | O   |                                                                         |
| 6   | RDSCLK     | I   | Clock input from RDS decoder (Interruption 2, without RDS : Low output) |
| 7   | REMOCON    | I   | REMOCON signal input (Interruption 3)                                   |
| 8   | XRESET     | I   | μ-com reset input                                                       |
| 9   | XT1        | –   | Subclock (connect to VDD when no use)                                   |
| 10  | XT2        | –   | Subclock (leave open when no use, and set the bit 6 of OCR SFR)         |
| 11  | VSS1       | –   |                                                                         |
| 12  | CF1        | –   | Main Clock (connect to VDD when no use)                                 |
| 13  | CF2        | –   | Main Clock (leave open when no use)                                     |
| 14  | VDD1       | –   |                                                                         |
| 15  | SIMUKE     | I   | Destination distinction input                                           |
| 16  | MODEL      | I   | Model distinction input                                                 |
| 17  | VDET       | I   | DVD3.3V detection input                                                 |
| 18  | KEY1       | I   | Key1 input                                                              |
| 19  | KEY2       | I   | Key2 input                                                              |
| 20  | KEY3       | I   | Key3 input                                                              |
| 21  | LEVELIN    | I   | Level meter signal input                                                |
| 22  | XPROTECT   | I   | Protection and Fan Error detection input                                |
| 23  | NC         | O   |                                                                         |
| 24  | NC         | O   |                                                                         |
| 25  | NC         | O   |                                                                         |
| 26  | NC         | O   |                                                                         |
| 27  | LCDDAT     | O   | Data for FL(LCD) driver                                                 |
| 28  | LCDCLK     | O   | Clock for FL(LCD) driver                                                |
| 29  | DTS_ON/OFF | O   | Control for DTS                                                         |
| 30  | XREADY     | O   | Chip select for system bus (to DVD module)                              |
| 31  | XHPMUTE    | O   | HP MUTE ON/OFF                                                          |
| 32  | XRECMUTE   | O   | REC OUTPUT MUTE ON/OFF                                                  |
| 33  | B_MUSIC    | O   | Control for LED of BASS MUSIC                                           |
| 34  | RYR        | O   | REAR RELAY ON/OFF                                                       |
| 35  | RYFSC      | O   | FRONT/SW/CENTER RELAY ON/OFF                                            |
| 36  | B_MOVIE    | O   | Control for LED of BASS MOVIE                                           |
| 37  | TIMERLED   | O   | Control TIMER LED                                                       |
| 38  | VOCALC     | O   | Control for VOCALC                                                      |
| 39  | VSS4       | –   |                                                                         |
| 40  | VDD4       | –   |                                                                         |

| No. | Pin Name  | I/O | Pin Function                                    |
|-----|-----------|-----|-------------------------------------------------|
| 41  | ATT10dB   | O   | Control for ATT 10dB                            |
| 42  | ATT6dB    | O   | Control for ATT 6dB                             |
| 43  | STEST     | I   | Set TESTMODE for Service                        |
| 44  | UTEST     | I   | Set UNITCHECK for checker                       |
| 45  | DTSDMX    | O   | Control of gain-up for DTS down-mix             |
| 46  | SWFMX     | O   | Control for subwoofer mix                       |
| 47  | VOCALA    | O   | Control for VOCALA                              |
| 48  | VOCALB    | O   | Control for VOCALB                              |
| 49  | SDATA     | O   | System bus data output (AMP side output)        |
| 50  | MDATA     | I   | System bus data input (AMP side input)          |
| 51  | SCLK      | I   | System bus clock input                          |
| 52  | TXCE      | O   | Chip enable for Tuner LSI                       |
| 53  | NC        | –   |                                                 |
| 54  | NC        | –   |                                                 |
| 55  | VDD2      | –   |                                                 |
| 56  | VSS2      | –   |                                                 |
| 57  | TCHALF    | I   | Input switch of mecha half                      |
| 58  | TCMODE    | I   | Input switch of mecha mode                      |
| 59  | TCRECF    | I   | Input switch of mecha during recording forward  |
| 60  | TCRECR    | I   | Input switch of mecha during recording reverse  |
| 61  | TXCLK     | O   | Clock for tuner LSI                             |
| 62  | TXODATA   | O   | Data for tuner LSI                              |
| 63  | TCEXPOE   | O   | Output enable to EXPAND IC for deck             |
| 64  | NC        | O   |                                                 |
| 65  | NC        | O   |                                                 |
| 66  | TXIDATA   | I   | Input data from tuner LSI                       |
| 67  | DVDACK    | I   | Acknowledgement from DVD MODULE(Interruption 4) |
| 68  | TCPULSE   | I   | Input pulse of TC reel                          |
| 69  | DVDMUTE   | I   | Request of MUTE from DVD MODULE(Interruption 5) |
| 70  | TCMSIN    | I   | Input MS signa                                  |
| 71  | TCEXPCLK  | O   | Clock to EXPAND IC for deck                     |
| 72  | TCEXPCE   | O   | Chip enable to EXPAND IC for deck               |
| 73  | TCEXPDAT  | O   | Data to EXPAND IC for deck                      |
| 74  | INPUTSELB | O   | AUDIO INPUT SELECT B                            |
| 75  | INPUTSELA | O   | AUDIO INPUT SELECT A                            |
| 76  | EHCNT1    | O   | Control for ECHO1                               |
| 77  | NC        | O   |                                                 |
| 78  | NC        | O   |                                                 |
| 79  | NC        | O   |                                                 |
| 80  | NC        | O   |                                                 |

A

| No. | Pin Name   | I/O | Pin Function                                                                  |
|-----|------------|-----|-------------------------------------------------------------------------------|
| 81  | EHCNT2     | O   | Control for ECHO2                                                             |
| 82  | NC         | O   |                                                                               |
| 83  | NC         | O   |                                                                               |
| 84  | NC         | O   |                                                                               |
| 85  | NC         | O   |                                                                               |
| 86  | ADMD       | I   | Control of DSPMUTE combining DIRERR, "H" at digital mode, "L" at analog mode. |
| 87  | XDSPMUTE   | O   | MUTE request to DSP module                                                    |
| 88  | VSS3       | –   |                                                                               |
| 89  | VDD3       | –   |                                                                               |
| 90  | KCONSTB    | O   | Strobe for KEY CONTROL IC                                                     |
| 91  | SYSPOW     | O   | Control power supply of system                                                |
| 92  | KCONDATA   | O   | Data for KEY CONTROL IC                                                       |
| 93  | XDVDRST    | O   | RESET to DVD MODULE                                                           |
| 94  | XSYSMUTE   | O   | Control mute of system                                                        |
| 95  | KCONCLK    | O   | Clock for KEY CONTROL IC                                                      |
| 96  | VOLCLK     | O   | Clock for E-vol IC                                                            |
| 97  | VOLDATA/CE | O   | Data/CE for E-vol IC                                                          |
| 98  | FLASH E/D  | –   | for FLASH writing                                                             |
| 99  | FLASH DO   | –   | for FLASH writing                                                             |
| 100 | FLASH CLK  | –   | for FLASH writing                                                             |

B

C

#### ● EXPAND IC (BU4094) Control for deck

| No. |    |          | actual function            |
|-----|----|----------|----------------------------|
| 1   | Q1 | XPBMUTE  | Control PB mute            |
| 2   | Q2 | PB/XREC  | Switch DOLBY PB/REC        |
| 3   | Q3 | RMUTE    | Control REC mute           |
| 4   | Q4 | DOLBY    | Control DOLBY NR (Standby) |
| 5   | Q5 | SOL      | Output tape solenoid       |
| 6   | Q6 | MOTOR    | Output tape motor          |
| 7   | Q7 | BIAS     | Control bias of deck       |
| 8   | Q8 | XBEATCUT | Control beat cut of deck   |

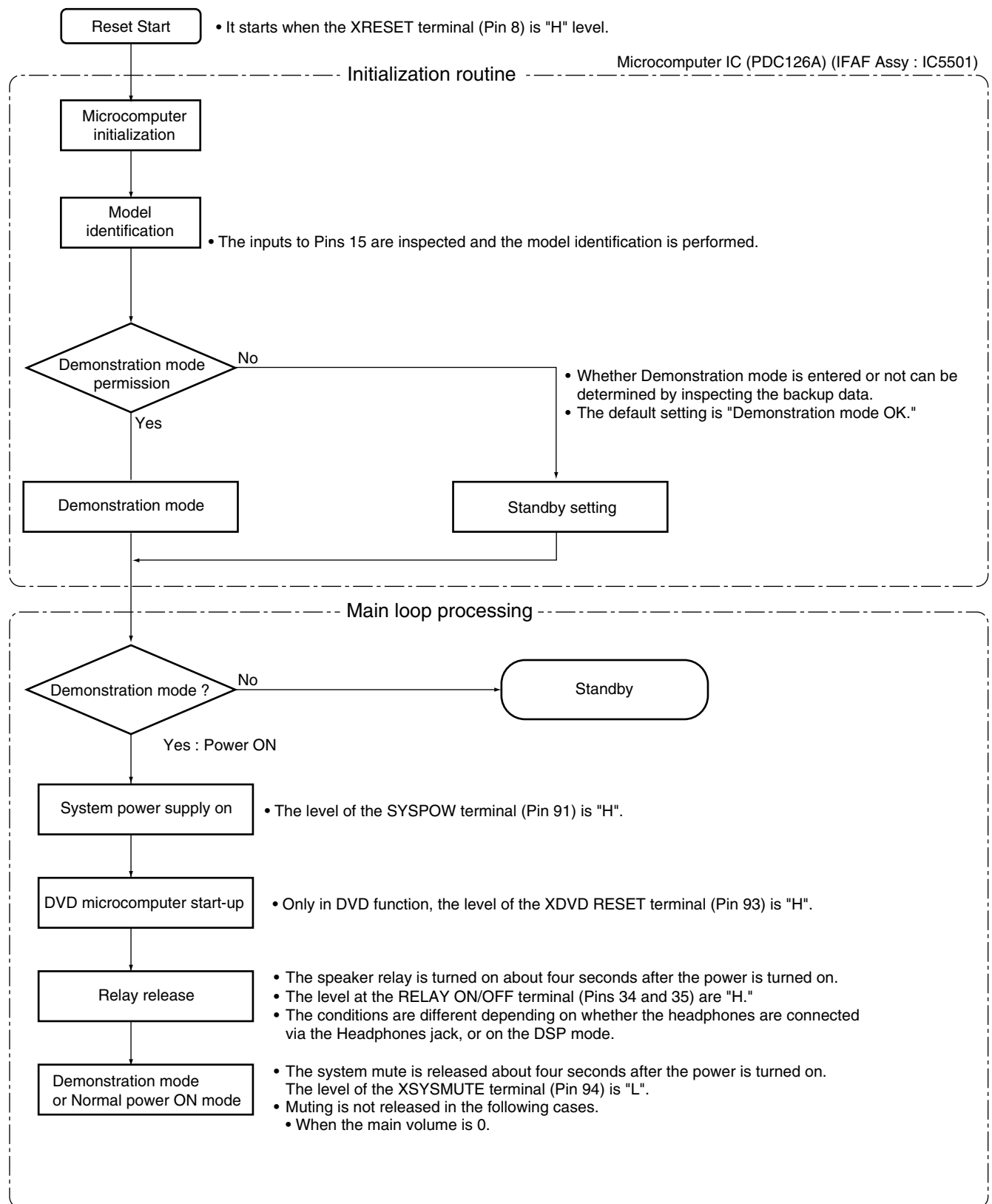
D

E

F

## 7.3 EXPLANATION

### 7.3.1 SEQUENCE AFTER POWER ON



- If no pulse is input to the AC terminal (Pin 4) for about 60 msec when the microcomputer is in Memory Backup mode, it will not do any processing.
- The unit will recover from Memory Backup mode if a reset command is input to the XRESET terminal (Pin 8).

## 7.3.2 PROTECTION CIRCUIT

If the TIMER LED on the front panel flashes, check the protection circuit.

Note: If the protection circuit activates, the unit will not recover for 60 seconds even if the AC power cord is disconnected then reconnected.

If you activate Service Test mode, the protection circuit becomes invalid, which makes diagnosis easy. (To activate Service Test mode, while connecting STTEST port (IC5501 Pin43) to "+5V", connect AC power cord.) (Refer to "7.1.6 SERVICE TEST MODE")

There are three types of operations for the protection circuit, which are indicated on the FL display when Service Test mode is entered:

PRTECT WNG: The unit was shut down because of an abnormality in the AMP system. (The PROTECT line operates at the MID level.)

PRTECT ERR: The unit was shut down because of a failure in the AMP system. (The PROTECT line operates at the LO level.)

DVD PRTECT: The unit was shut down because of a failure in the DVD system. (The VDET line operates at the HI or LO level.)

### Conditions for the protect circuit operations

|         | Voltage   |             | Conditions                                       | FL display in Service Test mode |
|---------|-----------|-------------|--------------------------------------------------|---------------------------------|
| PROTECT | HI level  | >3.55V      | Normal                                           |                                 |
|         | MID level | 1.8V - 3.5V | The unit is shut down because of an abnormality. | PRTECT WNG                      |
|         | LO level  | <1.8V       | The unit is shut down because of a failure.      | PRTECT ERR                      |
| VDET    | HI level  | >4.25V      | The unit is shut down because of a failure.      | DVD PRTECT                      |
|         | MID level | 3.3V        | Normal                                           |                                 |
|         | LO level  | <2.5V       | The unit is shut down because of an abnormality. | DVD PRTECT                      |

The possible failures for each error message are as follows:

PRTECT WNG:

- The Speaker terminal became overloaded because of short-circuit. (See ①.)

PRTECT ERR:

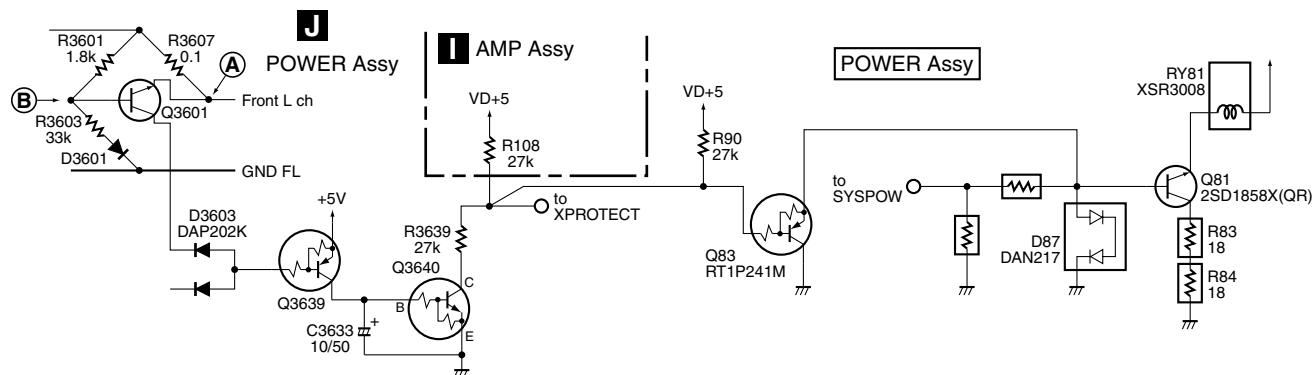
- The main power supply became LO level because of short-circuit or disconnection of connectors. (See ②.)
- Disconnection of the FAN connector or interruption of rotation of the fan (See ③.)
- DC was generated at the output because of a failure in the AMP system, etc. (See ④.)
- Abnormal temperature was detected by the thermistor. (See ⑤.)

DVD PRTECT:

- An error was generated in the main power supply inside the DVDM. (See ⑥.)

### Protection circuit that activates against a PRTECT WNG error

#### ① When the Speaker terminal becomes overloaded



In Normal mode, the speaker (6 ohms) is connected between the FL and GND FL points. Because the voltage at Point A is higher than that at Point B, Q3601 does not operate.

If the resistance between the FL and GND FL points becomes 1.83 ohms or less, Q3601 begins to operate, Q3639 is turned on, Q3640 (E, C, and B) is turned on, and the level of XPROTECT becomes MID.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

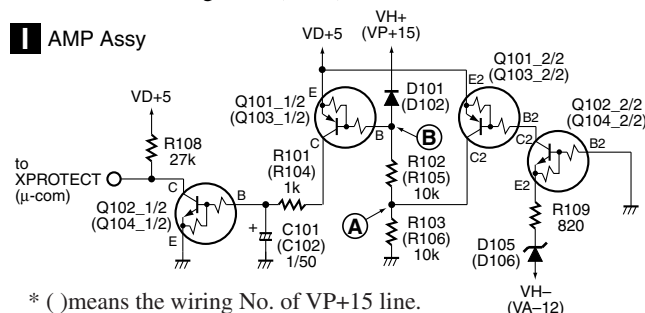
## ■ Protection circuit that activates against a PRTCT ERR error

- ② When the main power supply becomes LO level because of short-circuit or disconnection of connectors

### ② -1 Short-circuit-detection circuit for the amplifier power circuit (VH+[VP+15], VD+5, -12 V [VA-12])

Circuit for shutting the power off when VP+15, VD+5, or VA-12 is short-circuited to ground (GND)

#### ■ AMP Assy



\* ( ) means the wiring No. of VP+15 line.

- In Normal mode, as Q101 (Q103) (E2, B2, C2) and Q102 (Q104) (E2, B2, C2) are on, the voltage at Point (A) is about 5 V. The voltage at Point (B) is therefore about the same. As Q101 (Q103) (E, C, B) is off, Q102 (Q104) (E, C, B) is also off.

#### (1) When VH+(VP+15) is short-circuited to GND

As the voltage at Point (B) becomes almost ground potential, and Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

#### (2) When VH-(VA-12) is short-circuited

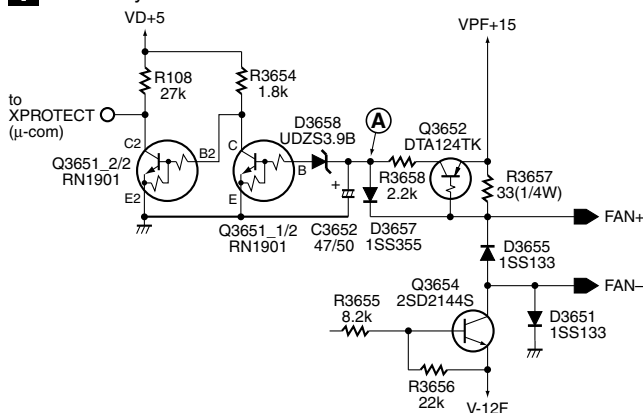
As the electric potential of VE at Q102 (Q104) (E2, C2, B2) becomes the same as that at VB, Q102 (Q104) (E2, C2, B2) is turned off. Following this, Q101 (Q103) (E2, B2, C2) is turned off, which changes the voltage at Points (A) and (B) to a value other than 5 V. Therefore, Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

#### (3) When VD+5 is short-circuited

The level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

- ③ When the FAN connector is disconnected or when rotation of the fan is interrupted

#### ■ AMP Assy



If no fan is connected between FAN+ and FAN-, or when the fan cannot rotate because of a foreign object caught in the blades, the BASE of Q3652 becomes OPEN, and Q3652 and Q3651-1/2 (E, C, B) are turned off. Then Q3651-2/2 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

When FAN+ and FAN- are short-circuited, the electric potential at Point (A) becomes higher than GND level by the addition of the values at D3656 and D3657. As this value is lower than that at D3658, Q3651 (E, C, B) is turned off, Q3651 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

## A



- C

- 1

## D

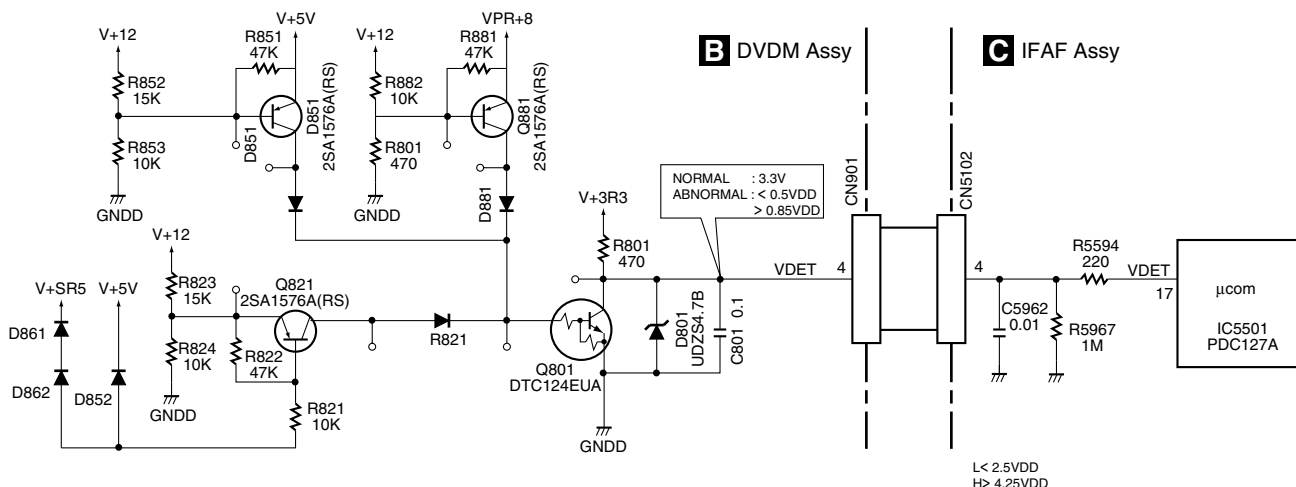


F

## Protection circuit that activates against a DVD PRTECT error

⑥ The DVDM monitors the voltage of the main power supply by VDET signals.

In Normal mode, the VDET signal is at the MID level (3.3 V). In the following conditions, the VDET signal level becomes L or H, and the microcomputer is notified of this abnormality.



### Items to be detected by VDET

(1) When the power voltages inside the DVDM become abnormal, as shown in the table below

| Status                         | Power   | Voltage | Operation |      |      |      | VDET voltage |
|--------------------------------|---------|---------|-----------|------|------|------|--------------|
|                                |         |         | Q881      | Q851 | Q821 | Q801 |              |
| In Normal mode                 |         |         | off       | off  | off  | off  | Mid 3.3V     |
| When an abnormality is generat | VDVD+12 | <8.8V   | on        | on   | off  | on   | L            |
|                                |         | >15.5V  | off       | off  | on   | on   | L            |
|                                | VPR+8   | <5.2V   | –         | off  | on   | on   | L            |
|                                |         | >12.6V  | on        | –    | –    | on   | L            |
|                                | V+6R5   | <3V     | –         | –    | on   | on   | L            |
|                                | V+5     | <3.6V   | –         | off  | on   | on   | L            |
|                                |         | >6.6V   | –         | on   | off  | on   | L            |
|                                | V+3R3   | <2.5V   | –         | –    | –    | –    | L            |
|                                |         | >4.25V  | –         | –    | –    | –    | H            |

(2) When the VDET signal to the microcomputer is interrupted because of defective soldering of the 30-pin connector or incomplete insertion of FFC

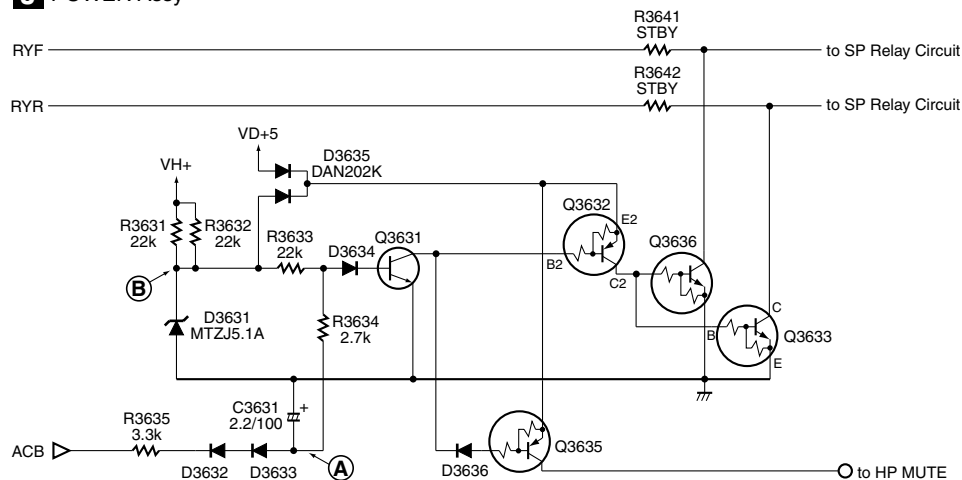
→ The VDET level is lowered by the pull-down resistor (1 Mohms) on the side of the microcomputer.

## Other protection circuit

### A AC detection circuit

⑦ This is a protection circuit that prevents popping sounds in the Speaker and Headphones output when the AC power cord is connected or disconnected.

#### J POWER Assy



- The voltage at Point ① is a DC voltage which has been generated by half-wave rectification on the minus side of the AC power.
- The voltage at Point ② is approx. 5 V.

- The base voltage at Q3631 is a voltage between Points ① and ② divided by R3633 and R3634. As this voltage is negative (-) in Normal mode, Q3631 is off.  
When the AC power cord is disconnected and there is no AC power input, the base voltage at Q3631 becomes +0.6 V or more, and Q3631 is turned on. Then, the operations below follow.

#### (1) SP Relay

Q3632 (E2, C2, B2), Q3633, and Q3636 (E, C, B) are turned on, the line to activate the power amp mute becomes low level, and the power amp mute is turned on.

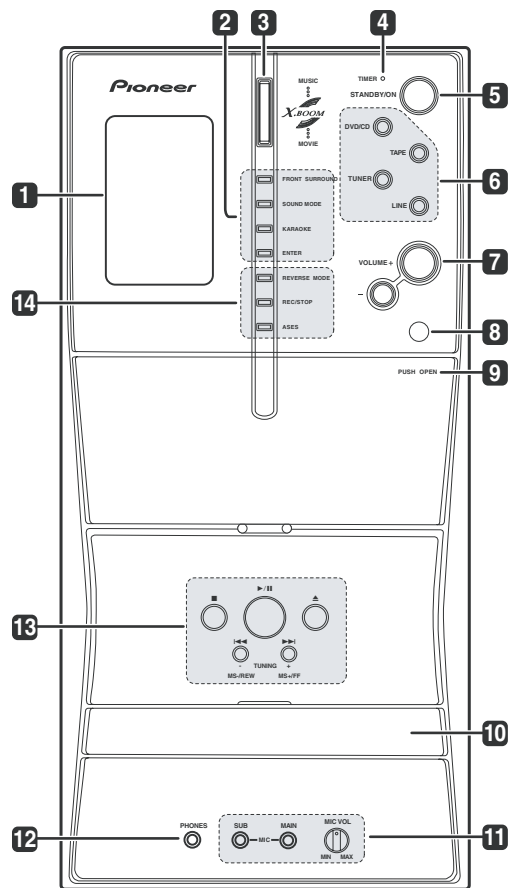
#### (2) HP MUTE

Q3635 is turned on, and the MUTE circuit for HP is turned on.

# 8. PANEL FACILITIES

## Front panel

Illustration shows the EV700/1000 model



### 1 Display

See Display below.

### 2 Sound options

**FRONT SURROUND** (EV700/1000 only) – Switches on the Front Surround mode.

**SFC** (EV500 only) – Selects sound modes or custom settings from the Sound Field Control.

### SOUND MODE

Accesses settings in the Sound menu, such as the tone controls.

**KARAOKE** – Selects audio channels for karaoke.

**ENTER** – Selects options or executes commands.

### 3 X.BOOM button

Press to switch on the bass boost.

### 4 TIMER indicator

Lights when the timer has been set.

### 5 STANDBY/ON

Switches the player on or into standby.

### 6 Function select buttons

Selects the source you want to listen to.

### 7 VOLUME +/-

Adjusts the volume level.

### 8 Remote sensor

### 9 PUSH OPEN

Pressing down on this side on the cassette door will open the tape deck.

### 10 Disc tray

### 11 MIC VOL and MIC input jacks

Controls the volume of the karaoke mics (MAIN and SUB).

### 12 PHONES jack

Headphone jack.

### 13 TUNING and playback control buttons

The tuning/scan/skip buttons are used for tuning into stations, skipping or scanning tracks on discs or tapes. The playback control buttons are used for playing, pausing and stopping playback (▲ ejects the disc).

### 14 Tape cassette controls

**REVERSE MODE** – Selects the playback mode for tapes.

**REC/STOP** – Starts/stops recording on the tape deck.

**ASES** – Press for CD-to-tape synchro recording.

**KEY** – Lights when the Karaoke pitch control is selected.

**KARAOKE** (Vocal cancel) – Vocals in the backing track are partially eliminated using EQ.

**L** – Left channel only. Use for tracks that have a vocal recorded in the right channel.

**R** – Right channel only. Use for tracks that have a vocal recorded in the left channel.

**L R** – Use to put a single-channel vocal track into the center of the mix.

### 3 Cassette deck indicators

**B.CUT** – Lights when the beat cut mode has been switched to **B.CUT 2**.

**ASES REC** – Lights during ASES recording.

**REC** – Lights when recording to the tape deck.

◀ ▶ – Indicates the direction of tape playback.

(↺) – Indicates the reverse mode.

### 4 Format indicators

PRO LOGIC II (EV700/1000 only) – Lights during Dolby Pro Logic II decoding.

DIGITAL – Lights during playback of a Dolby Digital signal.

DTS – Lights during playback of a DTS source.

### 5 Tuner indicators

**MONO** – Lights when FM mono reception is selected.

**STEREO** – Lights when a stereo FM broadcast is being received in auto stereo mode.

**TUNED** – Lights when a broadcast is being received.

### 6 DSP indicators

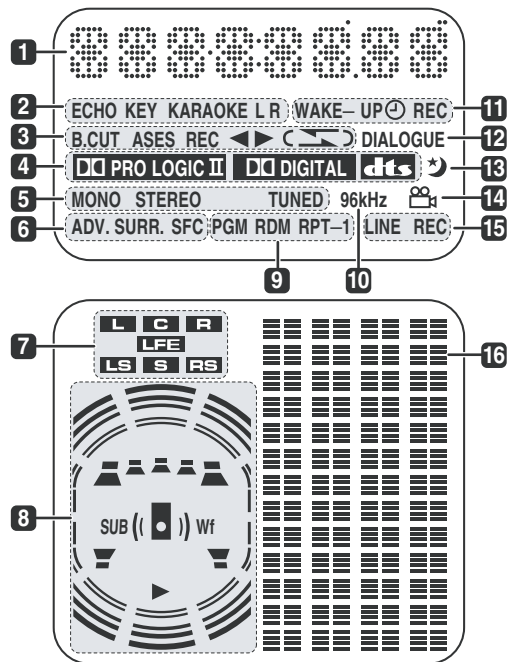
**ADV.SURR.** (EV700/1000 only)

Lights when one of the Advanced or Front Surround listening modes is selected.

**SFC** (EV500 only)

Lights when one of the Sound Field Control listening modes is selected.

## Display



### 1 Character display

### 2 Karaoke indicators

**ECHO** – Lights when the Karaoke **ECHO** effect is selected.

**7 Channel indicators** (EV700/1000 only)  
These will light according to which channels are encoded on the Dolby Digital or DTS multichannel disc currently in the player. **LFE** lights when the disc has an LFE channel.

**8 Speaker and playback indicators**  
The playback indicator (▶) lights during playback, and the speaker indicators (EV700/1000 only) show which speakers are being used to output the current source. The illustrations below show some example displays.



5.1 channel surround sound



Stereo (2.1 channel) sound



2 channel sound



5.1 channel surround sound with the Front Surround mode active

(When headphones are connected, none of the speaker indicators are lit.)

**9 Playback mode indicators**  
**PGM** – Lights during program play

**RDM** – Lights during random playback  
**RPT-1** – **RPT** lights during repeat play (**RPT-1** lights during repeat one-track play)

**10 96 kHz**  
Lights when a 96kHz source is detected (may not light if the source is copy – protected).

**11 Timer indicators**  
**WAKE-UP** – Lights when the wake-up timer is set.

⌚ – Lights when the wake-up timer is set and flashes when it activates.

**REC** – Lights when the record timer is set and flashes when the timer starts recording.

**12 DIALOGUE** (EV700/1000 only)  
Lights when Dialog Enhancement is on.

**13** 🌙  
Lights when the sleep timer is active

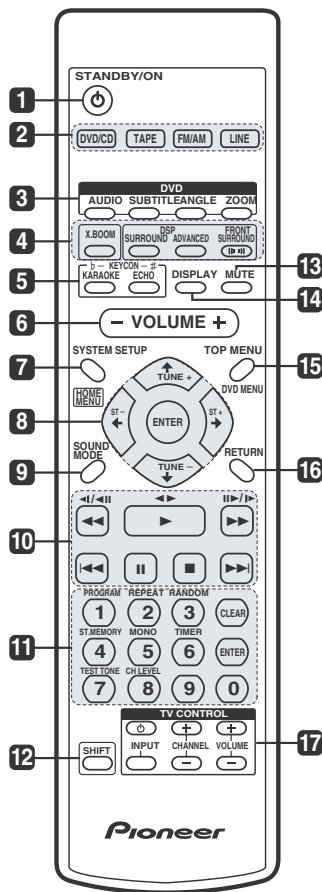
**14** 🎬  
Lights during multi-angle scenes on a DVD

**15 LINE REC** (EV700/1000 only)  
Lights when the line recording mode is switched on.

**16 Level meter**

## Remote control

Illustration shows the EV700/1000 model



### 1 STANDBY/ON

Switches the player on or into standby.

### 2 Input source function select

Selects the source you want to listen to.

### 3 DVD control buttons

**AUDIO** Selects the audio channel or language.

**SUBTITLE** – Selects a subtitle display.

**ANGLE** – Changes the camera angle during DVD multi-angle scene playback.

**ZOOM** – Changes the zoom level.

### 4 Sound Field / DSP buttons

**X.BOOM** – Switches the bass boost on or off.

**SFC / SOUND FIELD**(EV500 only)

Selects sound modes or custom settings from the Sound Field Control.

**SURROUND** (EV700/1000 only) – Selects a surround listening mode

**ADVANCED** (EV700/1000 only) – Selects an advanced listening mode

**FRONT SURROUND** (EV700/1000 only) – Switches on the Front Surround mode.

### 5 KARAOKE controls

**KARAOKE** – Selects audio channels for karaoke.

**ECHO** – Changes the echo level on the karaoke mics.

**KEY CONTROL** – Lowers/raises the pitch of the backing track.

### 6 VOLUME

Adjusts the volume level.

### 7 HOME MENU

Press to display (or exit) the on-screen menu for Initial Settings, Play Mode functions, etc.

**SYSTEM SETUP (SHIFT+HOME MENU)**

Use to make various system and surround sound settings (EV700/1000 only).

Also used when automatically saving station presets when using the tuner.

### 8 ENTER, TUNE & cursor control buttons

Navigates on-screen displays and menus.

**ENTER** selects an option or executes a command.

## 9 SOUND MODE

Accesses settings in the Sound menu, such as the tone controls.

## 10 Playback controls

- ▶ – Starts/resumes playback
- ◀◀ and ◀I/◀II – Use for reverse slow motion playback, frame reverse and reverse scanning
- ▶▶ and I▶/II▶ – Use for forward slow motion playback, frame advance and forward scanning
- ▶▶I – Jumps to the next chapter or track
- I◀◀ – Jumps to the beginning of the current chapter or track, then to previous chapters/tracks
- II – Pauses playback; press again to restart
- – Stops playback

## 11 Number buttons and SHIFT functions

The number buttons can be used for selecting tracks directly, the functions above the buttons are accessed by pressing **SHIFT** at the same time as the button.

- PROGRAM (SHIFT+1)** – Use to program/play a program list.
- REPEAT (SHIFT+2)** – Selects a repeat play mode.
- RANDOM (SHIFT+3)** – Selects a random play mode.
- ST.MEMORY (SHIFT+4)** – Use for saving and listening to station presets.
- MONO (SHIFT+5)** – Press to listen to a stereo FM broadcast in mono.
- TIMER (SHIFT+6)** – Use for setting and checking the clock and the timers.

**TEST TONE (SHIFT+7)** (EV700/1000 only) – Press to output the test tone for speaker setup.

**CH LEVEL (SHIFT+8)** (EV700/1000 only) – Use to adjust the speaker level.

**CLEAR** – Clears an entry

**ENTER** – Selects menu options, etc. (works exactly the same as the **ENTER** button in 8 above)

## 12 SHIFT

Press to access the functions/commands written in green on the remote

## 13 MUTE

Mutes the volume.

## 14 DISPLAY

Switches between information displays.

## 15 TOP MENU

Displays the top menu of a DVD disc.

## DVD MENU

Displays the DVD menu (for Video CD/ Super VCDs, DivX video and WMA/MP3/ JPEG discs, the Disc Navigator screen appears).

## 16 RETURN

Press to return to a previous menu screen.

## 17 TV CONTROL<sup>1</sup>

- ⏻ – Switches the TV on or into standby
- INPUT** – Switches the TV input
- CHANNEL +/-** – Selects channels
- VOLUME +/-** – Adjusts the TV volume

## ■ Jigs list

A

| Name                        | Jig No. | Remarks                     |
|-----------------------------|---------|-----------------------------|
| Service Remote Control Unit | GGF1381 | adjustment, diagnosis       |
| DVD Test Disc (DVD-Video)   | GGV1025 | Check of DVD-Video          |
| CD Test Disc                | STD-905 | Check of CD                 |
| Cable (5P)                  | GGD1425 | diagnosis of DVDM ASSY      |
| Flexible Cable (25P)        | GGD1309 | diagnosis of DVDM ASSY      |
| DVD Data Disc               | GGV1175 | diagnosis (ID data setting) |
| Test Tape                   | NCT-111 | Tape Speed adjustment       |
| Test Tape                   | NCT-112 | Tape Playback adjustment    |
| Test Tape                   | STD-633 | Normal blank tape           |

B

## ■ Lubricants and Glues list

■

| Name              | Lubricants and Glues No. | Remarks                                  |
|-------------------|--------------------------|------------------------------------------|
| Lubricating Oil   | GYA1001                  | refer to "2.5 05 LOADER ASSY"            |
| Daifree           | GEM1036                  | refer to "2.5 05 LOADER ASSY"            |
| Silicone Adhesive | GEM1037                  | refer to "2.6 Traverse Mechanism Assy-S" |
| Screw tight       | GYL1001                  | refer to "6.2.5 MECHANISM ADJUSTMENT"    |

C



■

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

| Position to be cleaned | Cleaning tools                                        |
|------------------------|-------------------------------------------------------|
| Pickup lenses          | Cleaning liquid : GEM1004<br>Cleaning paper : GED-008 |

D

| Position to be cleaned                      | Cleaning tools           |
|---------------------------------------------|--------------------------|
| Cassette heads<br>Pinch rollers<br>Capstans | Cleaning paper : GED-008 |

■

| Position to be cleaned | Cleaning tools           |
|------------------------|--------------------------|
| Fans                   | Cleaning paper : GED-008 |

E

F